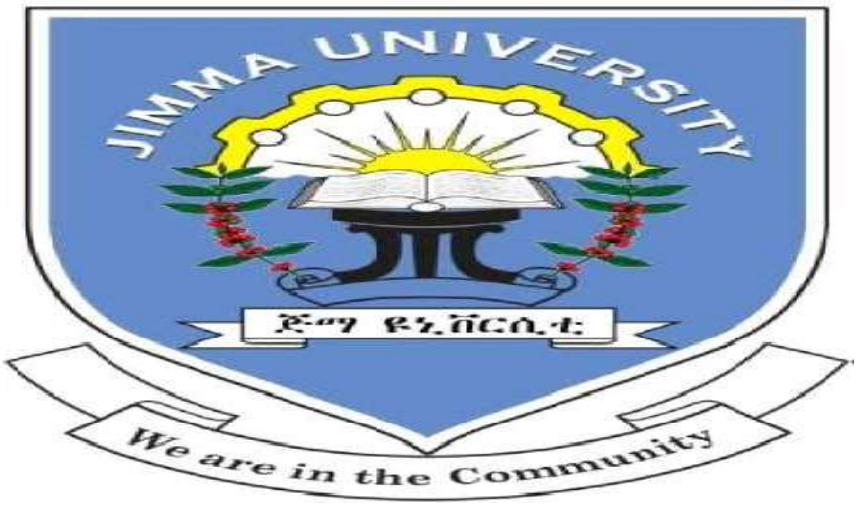
DETERMINANTS OF HOME DELIVERY AMONG MOTHERS IN ABOBO WOREDA, GAMBELLA REGION, SOUTHWEST ETHIOPIA: CASE CONTROL STUDY



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ABSTRACT

Background: Home delivery is giving birth to a baby in a place of home. One of the major reasons for high maternal mortality ratios in Sub-Saharan Africa is that most births take place at home. To enhance the number of deliveries at health facilities, there is a need to identify determinants of home delivery among mothers across all settings.

Objectives: The aim of this study was to determine factors associated with home delivery, among mothers in Abobo Woreda, Southwest Ethiopia, 2019.

Methods: A community based case control study was conducted on 264 mothers (88 cases and 176 controls) from March12-April 2/2019 in Abobo woreda, Southwest Ethiopia. Sample size was calculated using Epi info version 7. Cases were mothers who had gave birth at home or others home (family or relatives) in the last one year preceding the study while controls were mothers who had gave birth at health facility in the last one year preceding the study. Sample frame was prepared for cases and controls. Stratified random sampling technique was employed. A pretested and structured questionnaire was used. Data were checked, coded, entered to Epidata version 3.1 and analyzed using SPSS version 20. Univariate, bivariate and multivariable analysis were employed. Variables with P-value less than 0.05 in multivariable analysis were considered as significant variables with their corresponding 95% CI and adjusted odds ratio.

Result: - Two hundred sixty four (88 cases and 176 controls) were included in this study with 100% response rate. Of total respondents, 47(53.4%) cases and 58(33.0%) controls were above age of 30 years. No formal education [AOR:5.07, 95%CI :(2.18-11.50)], poor knowledge on obstetric complications [AOR: 3.83,95%CI :(1.98-7.40)], negative attitude towards delivery service[AOR: 3.25, 95%CI: (1.70-6.19)], poor household wealth index [AOR:4.55:95%CI:(2.01-10.31)] and no antenatal care visit [AOR:3.29,95%CI:(1.63-6.63)] were found to be independent predictors of home delivery.

Conclusion and Recommendation: - In this study, determinant factors associated with home delivery were no formal education, poor knowledge on obstetric complications, negative attitude towards delivery services, poor household wealth category and no ANC visit. Hence Gambella regional state, woreda health office, health workers, health extension workers and researchers need to tackle home delivery by focusing on the identified factors.

Key words: Determinants, home delivery, mothers, Abobo woreda.

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ACRONYMS

ANC	Antenatal care
AOR	Adjusted Odds Ratio
CI	Confidence Interval
COR	Crude Odds Ratio
EDHS	Ethiopian Demographic Health Survey
GRHB	Gambella Regional Health Bureau
HEWs	Health Extension Workers
HF	Health Facility
HSTP	Health Sector Transformation Plan
MM	Maternal Mortality
MMR	Maternal Mortality Ratio
PCA	Principal Component Analysis
PPS	Proportional allocation
SDG	Sustainable Development Goal
SPSS	Statistical Package for Social Science
SRS	Simple Random Sampling
TBA	Traditional Birth Attendant
WHO	World Health Organization

CHAPTER ONE: INTRODUCTION

1.1. BACKGROUND

Home delivery is giving birth to a baby in a place of home (residence). It can be attended or unattended, planned or unplanned. Women are attended when a professional, usually a midwife and rarely a general practitioner through labor and birth attend them. Women who are unassisted or only attended by their family, friend, or a non-professional birth attendant, is sometimes called free births. A "planned" home birth is a birth that occurs at home by intentions. An "unplanned" home birth occurs at home by necessity but not with intention (1,2).

Home deliveries attended by Traditional Birth Attendants (TBA) or other relatives are responsible for an increased risk of maternal and perinatal mortality as the attendants can neither Predict nor cope with serious complications, and also promptly referring mothers to an appropriate facility for emergency obstetric care. Maternal mortality (MM) is not merely due to particular pathologies but has strong association with women's social determinants of health (3).

Although most pregnancies and births are uneventful, far too many women still suffer and die from serious health issues during pregnancy and childbirths. As part of the Sustainable Development Goal (SDG 3.1) on health, the target is to reduce global Maternal Mortality Ratio (MMR) to less than 70 deaths per 100,000 live births with annual rate of 7.3% reduction and no country should have MMR higher than 140 deaths per 100,000 live births (4). The World Health Organization (WHO) report on the risk of home delivery has strongly suggested that first time delivery should be in a health facility(HF) otherwise a woman will be three times more likely to suffer a complication if she delivers in home setting (5).

In Ethiopia the targets of health sector transformation plan (HSTP-I) is to reduce the MMR to 199 maternal deaths per 100,000 live births by 2020. On behalf of this Ethiopia has one of the highest MMR in the world. However, in developing countries like Ethiopia home birth is widely practiced. Mothers deliver in unhygienic environment, without skilled birth attendant and live saving medications(6).

1.2. STATEMENT OF THE PROBLEM

Globally about two thirds of births take place in the HF. However in Sub Saharan Africa and South Asia which together contribute over 85% of maternal deaths only half of deliveries are institutional (7). Although institutional delivery has been promoted in the world, home delivery is still common, primarily in hard-to-reach areas. In 2016, millions of births globally were not assisted by a trained midwife, doctor or nurse, with only 78% of births were in the presence of a skilled birth attendant (4). Previous studies across the Sub-Saharan Africa report a significant proportion of mothers still deliver at home (8–10). For instance, according to demographic health survey reports of some African countries like Uganda, Kenya and Nigeria home delivery accounts around 25.2%, 37% and 63.1% (11–13).

According to Ethiopian demographic health survey (EDHS) 2016 report, Institutional deliveries have increased from 5% in 2000 to 26% in 2016. Despite this progress, home delivery was reported to 73%. However looking in to regional prevalence, home delivery ranges from 85.1% in Afar followed by 82% in Somali, 80.5% in Oromiya, 73.3% in Benishangul Gumuz, 72.5% in South Nations Nationality People Republic, 71.4% in Amhara, 53.6% in Gambella, 49.4% in Harari, 42.1% in Diredawa, 41.0% in Tigray and 3.0% in Addis Ababa (14).

Place of delivery is a crucial factor which affects the health and wellbeing of the mother and the newborn. If problems may arise during labor and delivery and not treated properly and effectively it can lead to ill health and even death of one or both of them (15). Globally an estimated 303,000 maternal deaths occur every year with 99% of these in developing countries due to pregnancy related causes and also Sub-Saharan Africa alone accounting for roughly 66% (16,17). One of the major reasons for high MMR in Sub-Saharan Africa is that most births take place at home (3). According EDHS 2016 report, the MMR was 412/100,000 live births (14).

Evidences supported long distance to nearest HF, inaccessibility, lack of appropriate facilities, presence of male midwifes in HF, mothers' decision on place of delivery, husbands' preference, mothers knowledge on danger signs of pregnancy, mothers attitude towards maternal health services, type of pregnancy, Antenatal care visit(ANC), occupational and educational status of mothers and husbands as factors contributing for home delivery (9,10,12,18).

Since home delivery is widely related to different factors; four options including community mobilization, cultural adaptation of birthing services for socio-cultural barriers, maternity waiting homes for distance barriers, and conditional cash transfers for financial or cost barriers were proposed to address determinants of home delivery. The progress also provided basic emergency obstetric and new born care (BEMONC) and comprehensive emergency obstetric and new born care (CEMONC) training for health workers (6,19).

Little is known about factors influencing the use of maternal healthcare services in Ethiopia in most regions in general and Gambella region particularly. Previously conducted study on the prevalence and factors influencing utilization of HF delivery in Abobo woreda of Gambella regional state indicated that only 8.5% women had given birth at health care facility and also factors like age of the mothers, health professionals approach and mothers perceived benefit towards HF delivery were identified (20). But factors related to mothers' attitude towards delivery services, mothers knowledge on danger signs of pregnancy and obstetric complications and household wealth index were not known in that woreda. This might be due to shortage of research evidences on determinants of home delivery in this setting. Hence, understanding the determinants of home delivery in the area like Gambella region especially Abobo woreda is very crucial for proper use of the institutional delivery services, which is one of the most effective strategies for preventing maternal mortality.

According to 2018 Gambella regional health bureau report (GRHB), the proportions of woredas with less than 50% skilled delivery coverage was high (100%), and Abobo woreda accounts around 32.3% of home delivery (21). This indicates that there should be focus in this district to narrow the performance gap of institutional delivery.

To curb the burden of high MM in Ethiopia, the low institutional delivery service coverage has to be improved. To enhance the number of deliveries at HF, there is a need to identify determinants of home delivery among mothers across all settings. In addition to this, it is clear that most of home deliveries have many risks but particularly more so in areas where skilled delivery is low. Therefore, this study was aimed to find out determinant factors associated with home delivery and to understand the gaps that are to be filled in order to increase HF delivery service utilization in Abobo Woreda.

CHAPTER TWO: LITERATURE REVIEW

2.1. Factors associated with Home delivery

A review of literatures suggested that home delivery occurs in different settings and that Predisposing, enabling and need based factors influences home delivery.

2.1.1. Predisposing factors

2.1.1.1. socio-demographic variables

Several studies were conducted in different parts of the world to asses factors associated with home delivery among mothers. Different studies suggested that there is a significant association between home delivery and socio demographic factors like age of the mothers, educational and occupational status of mothers and husbands, place of residence, family size and parity.

For instance, a study done in Ghana revealed that mothers age 31 years and above showed association with home delivery (22). Another study done in remote areas of rural Zambia showed that women who had delivered at home were older than mothers who were delivered at health facility (23). Also a study done in Zala woreda, Southern Ethiopia indicated that mothers with age greater than or equal to 30 years were three times more likely to give birth at home (24).

Educational status of mothers and husbands had also significantly associated with home delivery among mothers. A study done in Chandigarh of India indicated that the odds of home delivery was six times higher among illiterate women (25). Also a study done among Sudanese women suggested that mothers having no formal education, Primary education and secondary education were more likely to seek home delivery compared to those who obtained university education (26). Similarly, a study conducted in Bahirdar, Ethiopia indicated that mothers who had no formal education were four times [(AOR:4.2,95%CI:1.63,11.27)] more likely to deliver at home than those who had formal education (27). In addition to mothers education, a study done in Shashemene Town, Ethiopia indicated that women who had illiterate husband were eight times more likely to give birth at home (28).

Place of residence was also identified as determinants of home delivery by different studies. For instance, studies done in Bahirdar, Ethiopia and Ayssaita, Afar revealed that the odds of home delivery was four and seven times higher among rural residents as compared to urban residents respectively (27,29). In contrast, being rural residence was negatively associated [(AOR:0.450, 95%CI: 0.256-0.789)] with home delivery in a study done at Kalu woreda, South Wollo Zone, Amhara region (30).

Regarding occupation, a study done in West Pokot country of Kenya indicated mothers who were housewives were five times more likely to deliver at home compared to employed mothers (31). Another study conducted in Anlemo district, Southern Ethiopia showed that mothers having farmer and merchant partners were six and 11.2 times more likely to deliver at home than those mothers having government worker partners respectively (32).

Family size was also indicated as predictors for home delivery by several studies. Accordingly, a study done in Istanbul, Turkey indicated that the number of home delivery in women living in households where five or more people lived was twofold higher (33). Another study done in Zala Woreda, Southern Ethiopia identified that mothers from family size of greater than or equal to five were four times more likely to give birth at home as compared to family size less than or equal to four (24). This was also reported by other study done in Gozamin district, Northwest Ethiopia as mothers with family size of seven and above were four times more likely to practice home delivery than those with family size of three and less than three (18).

Parity is also the other socio demographic factor that had an association with home delivery. A study done in rural Ghana indicated that those with two births, three births and four births or more were less likely to deliver in health facility compared with those with one birth (34). Similarly a study done in Arbaminch Zuria district, South Ethiopia showed that women who had more than one live birth or multiparous were four times more likely to give birth at home (35). On contrast to this a study conducted in Nigeria showed that parity had no significant association with home delivery among mothers (36).

2.1.1.2. Knowledge, attitude and decision related variables

In addition to socio-demographic characteristics, different studies revealed knowledge, attitude and decision making as determinants of home delivery. As indicated by the study done in Tanqua-Abergele district Tigray, Northern Ethiopia the odds of home delivery was nine times [(AOR:8.7,95%CI:2.3-32.9)] greater among women with poor knowledge of obstetric complication (37). Also studies conducted in Wolyta zone, Southern Ethiopia and Ayssaita, Afar, Ethiopia revealed that the odds of home birth among women who lacked knowledge about the danger signs of pregnancy was four and three times higher respectively (29,38).

Attitude of mothers towards maternal health service is another predictor of home delivery. Study done in Zala Woreda, Southern Ethiopia indicated that mothers with bad attitude were four times more likely to deliver at home as compared to mothers with good attitude (24). Regarding to decision on a place of delivery, a study done in Kalu Woreda, Amhara regional state indicated that those mothers who had no husband involvement in decision for institutional delivery were three times more likely to prefer home as place of delivery (30). This was also supported by a study done in Bonga town, Kafa Zone of Southwest Ethiopia which indicated that mothers who decided to deliver at HF by themselves were twice more likely to utilize skilled delivery attendants than others (39).

2.1.2. Enabling factors

2.1.2.1. socio-economic variables

Another factor that had an association with home delivery is household economic status. It was a significant predictor of home delivery in Studies done in Kenya and rural Ghana (31,34). Similarly studies done in Bench Maji Zone, Southwest Ethiopia and Simada district of Amhara region, Northwest Ethiopia stated that the odds of home delivery was higher among mothers from low house hold income (40,41).

The other factor that affects home delivery is media exposure. This was revealed by studies done in Debre markos town, Northwest Ethiopia and Tanqua-Abergele of Tigray, Northern Ethiopia which indicated that women who did not have media exposure like Television or Radio had

increased odds of home delivery by four and seven times as compared to those who had media exposure (37,42).

2.1.2.2. Health service related variables

Among the factors related to accessibility and availability of HF, study done in Gossas, Senegal identified lack of means of transport [(AOR 1.68; 95% CI: 1.02–3.95)] and unavailability of HF [(AOR 2.24; 95% CI 1.21–4.15)] as risk factors for home delivery (43). Similarly a study done in Northern Ethiopia revealed that the odds of home delivery was five times higher among women living more than two hours walking distance to the nearest HF (37).

2.1.3. Need based factors

2.1.3.1. Obstetric related variables

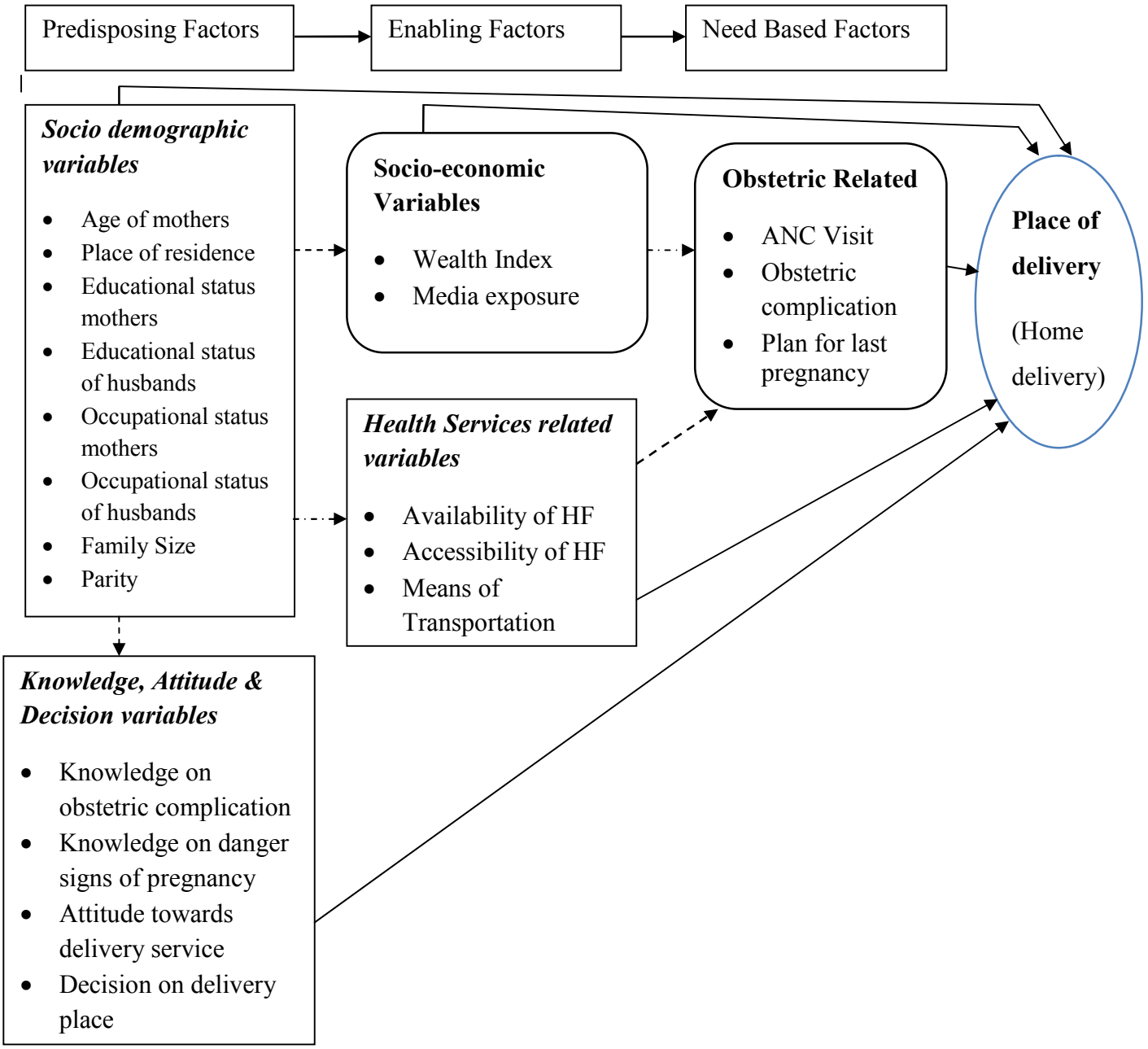
High level of home delivery utilization is not always due to predisposing and enabling factors but rather may be due to need based related factors. No ANC visit and having unplanned pregnancy had significant association with home delivery. Studies done in Istanbul, Turkey, Tigray of Northern Ethiopia and South Tigray zone, Ethiopia indicated that mothers with no ANC visit were more likely to give birth at home (33,37,44). Similarly, a study done in Debre markos town, Northwest Ethiopia showed that mothers who had unplanned last pregnancy were three times more likely to give birth at home (42).

Absence of any obstetric complications experience is also an important predictor for choosing home as place of delivery. This was supported by a study done in Kalu Woreda, Amhara regional state which indicated that mothers who had no history of obstetric complications were three times more likely to give birth at home as compared to mothers who had history of obstetric complications (30).

Generally, studies in different settings and countries showed that there was similarity and differences among determinants of home delivery. Accordingly, this study tried to determine the most important factors associated with home delivery among mothers in Abobo woreda, Gambella region, Southwest Ethiopia.

2.2. Conceptual framework

To conceptualize this study, Andersen and Newman socio-behavioral model framework of health services utilization was used. The model was first developed in the 1960s. This model hypothesizes that health service use is influenced by three determinants. These are predisposing, enabling and need based characteristics. Predisposing factors implies the proclivity to utilize health care services. An individual is more or less likely to use health services based on demographics, position within the social structures, and beliefs of health services benefits. Enabling factors on the other hand includes resources found within the family and the community. The third determinant which is need based factors includes the perception of need for health services, whether individual, social, or clinically evaluated perceptions of need (45–47).



Key: - - - → Association was not assessed in this study.

——→ Association was assessed in this study.

Figure 1: Conceptual frame work on the determinant factors of home delivery, among mothers in Abobo Woreda, Gambella region, Southwest Ethiopia, 2019.

Source: Adapted from Andersen's model of health care utilization and literatures (45–47).

2.3. Significance of the study

To improve maternal health increasing women's access to quality care before, during and after childbirth is important. Despite the health facilities being advocated as the ideal place and free of charge for delivery services through Health Extension Workers (HEWs), many women still prefer to deliver at home. Although high number of ANC attendances has been reported in this setting, the proportion of those pregnancies that are ultimately delivered at home still remains high. To overcome such problem, targeting determinant factors of home delivery were not well understood in Abobo Woreda.

Thus, findings from this study are helpful for woreda health office, programme managers and delivering mothers in the region to improve institutional delivery service utilization through significant reduction of giving birth at home. In addition, this study may serve as baseline information for further studies in the region.

CHAPTER THREE: OBJECTIVES

3.1. General objective

- To determine factors associated with home delivery, among mothers in Abobo Woreda, Gambella Region, Southwest Ethiopia, 2019.

3.2. Specific objectives

- To determine predisposing factors associated with home delivery, among mothers in Abobo Woreda, 2019.
- To identify enabling factors associated with home delivery, among mothers in Abobo Woreda, 2019.
- To explore need based factors associated with home delivery, among mothers in Abobo Woreda, 2019.

➢ **Hypothesis**

- Predisposing factors for home delivery are the same among cases and controls in Abobo Woreda.
- Enabling factors for home delivery are the same among cases and controls in Abobo Woreda.
- Need based factors for home deliveries are the same among cases and controls in Abobo Woreda.

CHAPTER FOUR: METHODS AND MATERIALS

4.1. Study area and period

The study was conducted in Abobo Woreda which is one of the administrative woredas found in the Anguwa Zone, Gambella region, Southwest Ethiopia. It is About 808 km away from Addis Ababa and 42 km from the capital city of the region, Gambella town. Abobo Woreda is the capital city of Anguwa zone and it has mean annual rain fall between 1337.5 mills' to 2726 mills' and has a minimum temperature of 23 ^{oc} and a maximum temperature of 33.1 ^{oc}. It has 19-kebeles (two urban and 17 rural) with the total population of 31,209 (15,292 males and 15,917 females). Among the total population 8,146 women's were in the reproductive age group. The Woreda has four health centers namely Abobo catholic mission health center, Ukuna health center, Village eight-health center and Pukedi health center. And there are also fifteen functional health posts in the woreda. All the health centers in the woreda were staffed with skilled professionals, equipped with supplies and provide delivery services. There are also two Ambulances in the woreda. The woreda administrative report of 2018 showed that, the overall home delivery among mothers in the woreda was high. This study was conducted from March 12-April 2/2019 (21).

Legend Abobo woreda

Figure 2: Showing map of Abobo woreda, Gambella region, Southwest Ethiopia, 2019.

4.2. Study design

- Community based case control study was conducted.

4.3. Population

4.3.1. Source Population for cases and controls

- **For cases**
  - All mothers who had gave birth at home in the last one year preceding the study in Abobo Woreda, Anguwa Zone, Gambella Region, Southwest Ethiopia.
- **For Controls**
  - All mothers who had gave birth at health facilities in the last one year preceding the study in Abobo Woreda, Anguwa Zone, Gambella Region, Southwest Ethiopia.

Cases: - were mothers who gave birth in the last one year at her home or others' home (relatives or family) or when a birth takes place outside of health institution irrespective of the delivery attendant.

Controls: - were mothers who gave birth in the last one year in health institution (health center in this case) irrespective of the delivery attendant.

4.3.2. Study Population

4.3.2.1. Study population for cases

- Mothers who had gave birth at home in the last one year preceding the study identified by survey and who fulfilled eligibility criteria.

4.3.2.2. Study population for controls

- Mothers who had gave birth at HF in the last one year preceding the study identified by survey and who fulfilled eligibility criteria.

4.3.3. Sampling unit

- Mothers in Abobo Woreda.

4.3.4. Study unit

- Selected mother in the study area.

4.3.5. Eligibility criteria for both cases and controls

Inclusion criteria:-

- ❖ Mothers who were permanent (>6 month) resident of the woreda during data collection in the study area.

Exclusion criteria:-

- ❖ Mothers with critical illness who were unable to communicate, those with hearing problem and previously diagnosed psychiatric illness were excluded.
- ❖ Mothers who gave birth for her last pregnancy out of the woreda were also excluded.

4.4. Sample size and sampling procedures

4.4.1. Sample size determination

The required sample size was calculated using Epi Info version 7 software program for double population proportions formula considering determinant variables of home delivery from previous similar studies (22,27,37). Then from a study conducted in Bahirdar, Ethiopia; rural residence was taken as major predictor variable since it gives the highest sample size. Among controls 6.48% of mothers, and among cases 20.0% were exposed to residence(rural) (27). By using assumptions of 80% power, 95% confidence level , 10% of non respondents, and control to case ratio of 2:1 the total sample size became **264** (**88 cases and 176 controls**) **(Table 1).**

Table 1: Sample size determination using associated variables for home delivery among mothers in Abobo woreda, Gambella region, Southwest Ethiopia, 2019.

Major variable	Confidence level	Assumptions				Total sample size with 10% non response			reference
		Power	Proportion of control exposed	Odds ratio	Case to control ratio	Case	control	Total	
Have No Radio/TV	95%	80%	45.4%	7.24	1:2	22	44	66	(37)
Poor knowledge on obstetric complication	95%	80%	54.1%	8.75	1:2	23	46	69	(37)
No Formal education	95%	80%	30.0%	4.27	1:2	31	62	93	(27)
Distance to HF (>2 hr)	95%	80%	13.1%	5.15	1:2	32	64	96	(37)
No ANC visit	95%	80%	7.1%	10.41	1:2	20	40	60	(37)
Age(>31)	95%	80%	28.3%	3.00	1:2	52	104	156	(22)
Rural residence	95%	80%	6.5%	3.60	1:2	**88**	**176**	**264**	(27)

4.4.2. Sampling technique and procedure

Stratified random sampling technique was used to select both cases and controls. All the 19 kebeles (two urban and 17 rural) found in Abobo Woreda were taken. Then, sampling frame was prepared for cases and controls separately for each kebeles with their corresponding household identification numbers by making house-to-house survey using checklist. Sample size was allocated by Proportional to the Size allocation (PPS) of each kebeles (Annex VI). Finally, **88 cases** and **176 controls** were selected by Simple random sampling technique within each strata using computer generated random number by excel sheet **(Fig 3).**

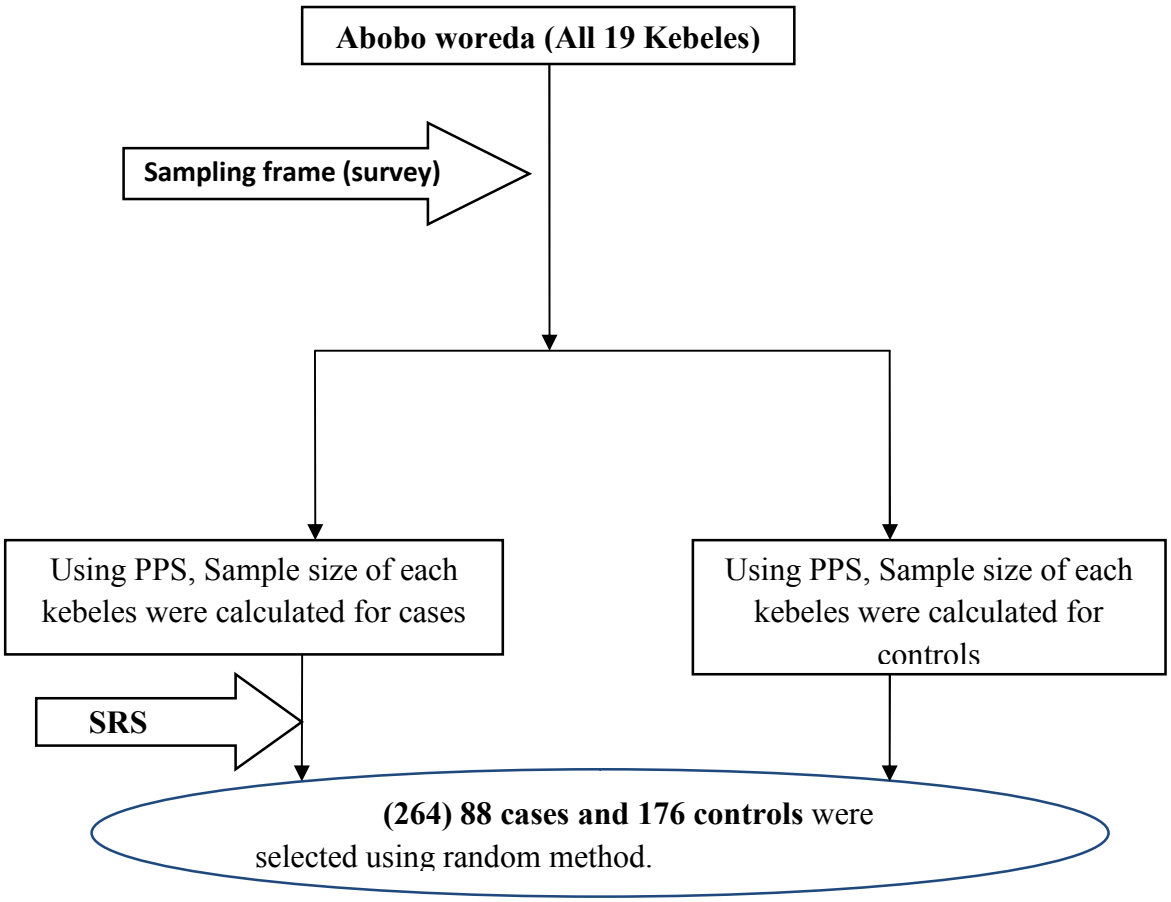


Figure 3: Sampling procedure for selecting cases and controls in Abobo Woreda, Gambella region, Southwest Ethiopia, 2019.

4.5. Data collection procedures (Instrument, personnel and technique)

4.5.1. Data collection instruments

The data collection structured questionnaire was adapted from different literatures and EDHS(14,22,37). These questionnaires were used for collection of data including on predisposing, enabling and need based factors.

4.5.2. Data collection personnel

Data were collected by using seven trained diploma nurses and the data collection was strictly supervised by two BSc health officers. Principal investigator and nineteen community volunteers employed survey.

4.5.3. Data collection technique

Data collectors collected the data through face-to-face interviews with mothers by making house to house visit. Survey was conducted to identify cases and controls one week prior to the actual data collection using checklist. During data collection period for those respondents who were absent at home, two visits were made and after two visits, another sample was taken from the list of frame.

4.6 .Study variables

4.6.1. Dependent variable

- Home delivery

4.6.2. Independent variables

- **Socio demographic**:- Age of mothers, place of residence, educational status of mothers, educational status of husbands, occupational status of mothers, occupational status of husbands, household family size and parity.

- **Knowledge and attitude related: -** Knowledge on obstetric complication, knowledge on danger signs of pregnancy, attitude of mothers towards delivery services and decision on place of delivery.
- **Socio-economic**: - Household wealth index and media exposure.
- **Health service related**- Availability of HF, accessibility of HF and means of transportation.
- **Obstetric related characteristics**: - ANC Visit, obstetric complication (Experience) and plan for last pregnancy.

4.7. Measurement

Knowledge on danger signs of pregnancy: - Mothers' knowledge on danger signs of pregnancy was assessed by asking wether mothers know or not know common types of danger signs. Scores were computed from their response. Then based on their scores mothers were divided in to those who had good knowledge (when they scored four and above) and poor knowledge (when they scored less than four) on danger signs of pregnancy (37).

Knowledge on obstetric complications: - Mothers' knowledge on obstetric complications was assessed by asking wether mothers know or not know common types of obstetric complications. Scores were computed from their responses. Then based on their scores mothers were classified in to those who had good knowledge (when they scored three and above) and poor knowledge on obstetric complications (when they scored less than three) (37).

Attitude towards delivery services: - Attitude score was calculated by asking six different questions including benefits of giving birth at HF for mothers, benefit of giving birth at HF for newborns, health professionals' skill to treat and refer, health services staffing and availability of supplies. Likert scale was applied to measure the attitude. Each item was scored on five point likert scale ranging from strongly disagree(1) to strongly agree(5) which yields a score range of 6-30. During pretest its internal consistency was checked using reliability statistics and no problems was identified (Cronbach's alpha =0.875). In addition to this, further statistics like item statistics (like mean and standard deviations of each item), inter item correlation(correlation coefficient for each item) and item total statistics (corrected item total correlation column and

Cronbach's alpha if item deleted) were checked and no problems were obtained. All individuals' answers were computed to obtain total scores and calculated for means. The mean score was used to divide the participants into two groups that are positive and negative group.

House hold wealth index:-This was measured from questions including 30 variables through asking whether a household had items like radio, television, mobile, electricity, refrigerator, bicycle, farm land, farm animals (milk cows, oxen, calf, horses, donkeys, mules, goats, sheep, or hen), own house, farm land equipments, and facilities such as type of floor, piped water, and toilets. Each household was then assigned a score for each asset, and the scores were summed for the particular household. Individuals were then ranked according to the total score.

4.8. Operational definitions

- **Parity:** Birth order of mother or total number of delivery that occur after 28 weeks of gestational age.
- **Knowledge on danger signs of pregnancy:** Mothers who mentioned at least four danger signs of pregnancy were classified as having good knowledge while those who mentioned less than four were categorized as having poor knowledge (37)**.**
- **Knowledge on obstetric complications of labor/delivery:** Mothers who mentioned at least three obstetric complications were classified as having good knowledge while those who mentioned less than three were categorized as having poor knowledge (37).
- **Attitude:** Mothers who scored greater than or equal to the mean were labeled as having positive attitude and those mothers who scored less than the mean were classified as having negative attitude.
- **Decision on place of delivery**: Mothers decisions on the place to give birth were asked and categorized as herself, with husband jointly, by husband only or by other family members (30).
- **Media exposure:** Those mother who reads a newspaper at least once a week or watches television at least once a week or listens to the radio at least once a week or accesses all three media at least once a week were categorized as having an exposure to media (14).

- **House hold wealth index:** Households were given scores based on the number and kinds of consumer goods they own, and these scores were derived using principal component analysis (PCA) (14).
- **Availability of HF:** In this study, HF included both health posts and health centers found near to their residence.

- **Accessibility of HF**: -

    - **Distance:** was measured in kilometers from home to the nearest HF. Mothers were asked about the average distance from their home to the nearest HF by foot. After that the responses of the mothers were changed in to Kilometer and those who mentioned distance > 5 kilometer were said to be far. ($\leq$ 5 kilometer = Accessible, > 5 kilometer = Inaccessible) OR

    - **Travel time**: Mothers were asked the average travel time from home to the nearest HF by foot. After that it was said to be inaccessible when the travel time was > 60 minutes. (> 1hour = Inaccessible, $\leq$ 1hour = Accessible).

- **Means of transportation:** This was assessed by asking mothers about the means of transportation they used when referred from the community or health posts to health centers and those mothers who reported that there was no any means of transportation (those mentioned only "foot'' as means of transportation) were classified as having no means of transportation services otherwise those who reported Ambulance or public transports were classified as having means of transportation (37).

- **Experience of obstetric complications**: Mothers who faced at least one obstetric complication for her last delivery was considered as having experience for obstetric complications unless they were considered as having no experience for obstetric complications.
- **ANC Visit:** Mothers who had history of at least one ANC follow up for her last pregnancy by skilled care provider were categorized as having ANC visit.

4.9. Data Processing and analysis procedures

Data were checked for completeness, coded and entered in to the computer using Epi Data version 3.1 software and were cleaned. Then the data were exported to Statistical Package for Social Science (SPSS 20) for further analysis and were checked for missing values before analysis. Univariate analysis like measure of centeral tendency and measures of dispersion for continuous variables was computed. Frequency distribution was done for categorical variables.

The household wealth index was computed using PCA method by considering locally available household assets which were dummy- coded after checking possible requirements. At the beginning recommended sample size requirement was checked. Next case to variable ratio was assessed by dividing total sample size to 30 variables of household assets and no problem was identified (Since it was >5 .i.e. = 8.8). The sampling adequacy was greater than 0.50 (which was 0.713). Many variables had correlation matrix greater than 0.30. Also Bartlett test of sphericity was checked and it was found significant (<0.001). After this entire checkup the analysis was done and most variables were removed because of communality, anti- image correlation, factor loading and complex structures. Finally five components with 13 variables were left. In each components more than one variable were loaded. Components were named by giving name of variables with highest loading. Then reliability and outlier were checked for the components. Finally the household wealth was computed and categorized into three categories.

Bivariate analysis was performed to see the association between each independent variable with the outcome variable using binary logistic regression model. Their odds ratios (OR) at 95% confidence interval (CI) and p-values were obtained. Then, variables observed in the bivariate analysis with (p-value < 0.25) were entered in to multivariable logistic regression. Multivariable analysis was employed to identify independent predictors of home delivery and to control for possible confounding effect. Multicollinearity diagnostic was done by checking variance inflation factor (VIF) and no problems were identified (No VIF >10). Backward stepwise logistic regression was used to determine independent predictors with p-value less than 0.05 with their respective AOR and 95% CI. The model fitness was checked by Hosmer-Lemeshow goodness of fit test and the model was declared as fit model since p-value was greater than 0.05. Finally, the results were presented by using text, tables and figures.

4.10. Data quality management

Data quality assurance mechanisms were carefully developed and implemented at various stages of the study. Before conducting survey community volunteers who were able to read and write were selected and one day training was given for them on how to identify cases and controls. To ensure data quality, one day training was also given to the supervisors and the data collectors on the whole procedure. Pre-test was conducted on 5% of the calculated sample size (four cases and nine controls) in the nearest woreda (Gog Woreda) to assess the clarity of the questions, their sensitiveness as well as understanding of the data collectors. Discussion was held based on the result of the pre-test and accordingly, some amendments were made. The adapted questionnaires were contextualized and translated into Amharic and the local language (Anywa) and translated back into English by the third person to check for its consistency.

The data were checked for completeness, accuracy, clarity and consistency by the supervisors and the investigator on daily basis. Any error or ambiguity and incompleteness were corrected accordingly and shared with data collectors. Each questionnaire was given a unique identification number that was taken as one variable during data entry. Data collectors had no information about who were cases and controls.

4.11. Ethical consideration

The proposal was submitted to Jimma University Research Ethics Review Committee in order to be approved and obtaining letter of clearance. Written official letter of cooperation from Jimma University was given to Abobo Woreda health office. Permission letter to conduct the study was obtained from Woreda health office. Data collectors were trained how to handle confidentiality and privacy using consent form attached to each questionnaire. Confidentiality was assured by excluding their name during the period of data collection. The study purpose, procedure, duration, possible risks and benefits of the study was clearly explained for study participants and informed verbal consent was obtained from respondents. Mothers were also informed about their right of not to engage in the study or to stop interview at any time.

4.12. Dissemination plan

The findings of this study will be submitted to Jimma University Institute of health, Faculty of public health, Department of Epidemiology. It will be presented during final thesis defense and will be disseminated to GRHB, Abobo Woreda health office and other concerned bodies. It will be tried to present in conferences and workshops and may be published.

CHAPTER FIVE. RESULTS

5.1. Predisposing factors of cases and controls

5.1.1. Sociodemographic characteristics

In this study, a total of 88 cases and 176 controls were included with a response rate of 100% in both groups. Of total respondents, 47(53.4%) cases and 58(33.0%) controls were above age of 30 years. The median ±IQR (Inter quartile range) age of cases and controls were 30.00±10 and 28.00±6 years respectively. About 60(68.2%) cases and 121(68.8%) controls were rural residents.

Regarding ethnicity, majority of study participants 55(62.5%) cases and 102(58.0%) controls were Anyuak. Concerning educational status, 22(25.0%) cases and 75(42.6%) controls had secondary and above educational status. Majority of cases 65(73.9%) and controls 126(71.6%) were housewives. About husbands' occupational status, 55(62.5%) cases and 91(51.7%) controls had farmer husbands. Of total 80(90.9%) cases and 165(93.8%) controls were married. From the total study participants 77(87.5%) cases and 144(81.8%) controls were protestant religion followers. Regarding to the number of birth order, 17(19.3%) cases and 44(25.0%) controls had two births **(Table 2).**

In **Bivariate** analysis from all socio demographic factors age of the mothers greater than 30 years, mothers with no formal educational status, husbands with farmer and student occupational status and parity had shown association with home delivery among mothers and considered as candidate for multivariable analysis **(Table 2).**

Table 2:- Bivariate analysis of Sociodemographic factors among cases and controls in Abobo woreda, Gambella region, Southwest Ethiopia, 2019.

Variables	Category	Cases(88) No.%	Controls(176) No.%	COR(95%CI)	P value
Age of mothers	15-24	19(21.6)	47(26.7)	1	
	25-29	22(25.0)	71(40.3)	0.77(0.38-1.57)	0.467
	≥30	47(53.4)	58(33.0)	2.00(1.04-3.87)	0.038*
Residence	Rural	60(68.2)	121(68.8)	0.97(0.56-1.69)	0.925
	Urban	28(31.8)	55(31.3)	1	
Educational Status of mothers	No formal education	42(47.7)	29(16.5)	4.94(2.53-9.66)	<0.001*
	Primary(1-8)	24(27.3)	72(40.9)	1.14(0.59—2.20)	0.705
	Secondary and above	22(25.0)	75(42.6)	1	
Educational Status of husbands	No formal education	17(19.3)	35(19.9)	1.08(0.54-2.16)	0.836
	Primary(1-8)	34(38.6)	59(33.5)	1.28(0.72-2.27)	0.403
	Secondary and above	37(42.0)	82(46.6)	1	
Occupational status of mothers	Housewives/Farmer	65(73.9)	126(71.6)	0.86(0.36-2.07)	0.736
	Students	9(10.2)	22(12.5)	0.68(0.22-2.12)	0.508
	Merchants	5(5.7)	13(7.4)	0.64(0.17-2.40)	0.510
	Government employee	9(10.2)	15(8.5)	1	
Occupational status of husbands	Farmer	55(62.5)	91(51.7)	1.77(0.89-3.54)	0.106*
	Students	10(11.4)	13(7.4)	2.25(0.81-6.27)	0.120*
	Daily Laborer	6(6.8)	14(8.0)	1.26(0.4-3.89)	0.694
	Merchants	3(3.4)	17(9.7)	0.52(0.13-2.03)	0.345
	Government Employee	14(15.9)	41(23.3)	1	
Family size	<5	36(40.9)	79(44.9)	1	
	≥5	52(59.1)	97(55.1)	1.18(0.70-1.98)	0.539
Parity	One birth	22(25.0)	35(19.9)	1	
	Two birth	17(19.3)	44(25.0)	0.62(0.28-1.33)	0.217*
	Three birth	14(15.9)	35(19.9)	0.64(0.28-1.44)	0.279
	Four birth	19(21.6)	30(17.0)	1.008(0.46-2.21)	0.985
	Fifth and above birth	16(18.2)	32(18.2)	0.79(0.36-1.78)	0.576

**** Significant at p<0.25, COR=Crude Odds Ratio, CI=Confidence Interval***

5.1.2. Knowledge, attitude and decision on the place of delivery

Almost all cases and controls had heard about different types of obstetric complications and danger signs of pregnancy. Thirty-four (38.6%) cases and ninety-eight (55.7%) controls had good knowledge about danger signs of pregnancy. Regarding knowledge about obstetric complications, 26(29.5%) cases and 118(67.0%) controls had good knowledge.

Regarding about attitude towards delivery services, six questions related to benefits of giving birth at HF, health professionals' skill, health services staffing, and availability of supplies were asked. Accordingly, 30(34.1%) cases and 125(71.0%) controls had positive attitude towards delivery services **(Table 3).**

In **Bivariate** analysis knowledge on danger signs of pregnancy, knowledge on obstetric complications and attitude towards delivery services showed association and nominated as candidate for multivariable analysis **(Table 3).**

Table 3:- Bivariate analysis of knowledge, attitude and decision on place of delivery among cases and controls in Abobo woreda, Gambella region, Southwest Ethiopia, 2019.

Variables	Category	Cases(88) No.%	Controls(176) No.%	COR(95%CI)	P value
Knowledge on danger sign of pregnancy	Poor	54(61.4)	78(44.3)	1.99(1.18-3.36)	0.009*
	Good	34(38.6)	98(55.7)	1	
Knowledge on obstetric complications	Poor	62(70.5)	58(33.0)	4.85(2.78-8.46)	<0.001*
	Good	26(29.5)	118(67.0)	1	
Attitude towards delivery services	Negative	58(65.9)	51(29.0)	4.74(2.74-8.19)	<0.001*
	Positive	30(34.1)	125(71.0)	1	
Decision on place of delivery	Self	26(29.5)	49(27.8)	0.97(0.32-2.93)	0.961
	With husband	30(34.1)	81(46.0)	0.68(0.23-1.99)	0.482
	Husband alone	26(29.5)	35(19.9)	1.36(0.45-4.16)	0.588
	others*	6(6.8)	11(6.3)	1	

**** Significant at p<0.25; others*(other family members like mothers), COR=Crude Odds Ratio, CI=Confidence Interval***

The most three commonly mentioned obstetric complications were prolonged labor by 61(69.3%) cases and 165(93.8%) controls, excessive vaginal bleeding by 53(60.2%) cases and 146(83.0%) controls and increased blood pressure by 42(47.7%) cases and 112(63.6%) controls **(Fig 4).**

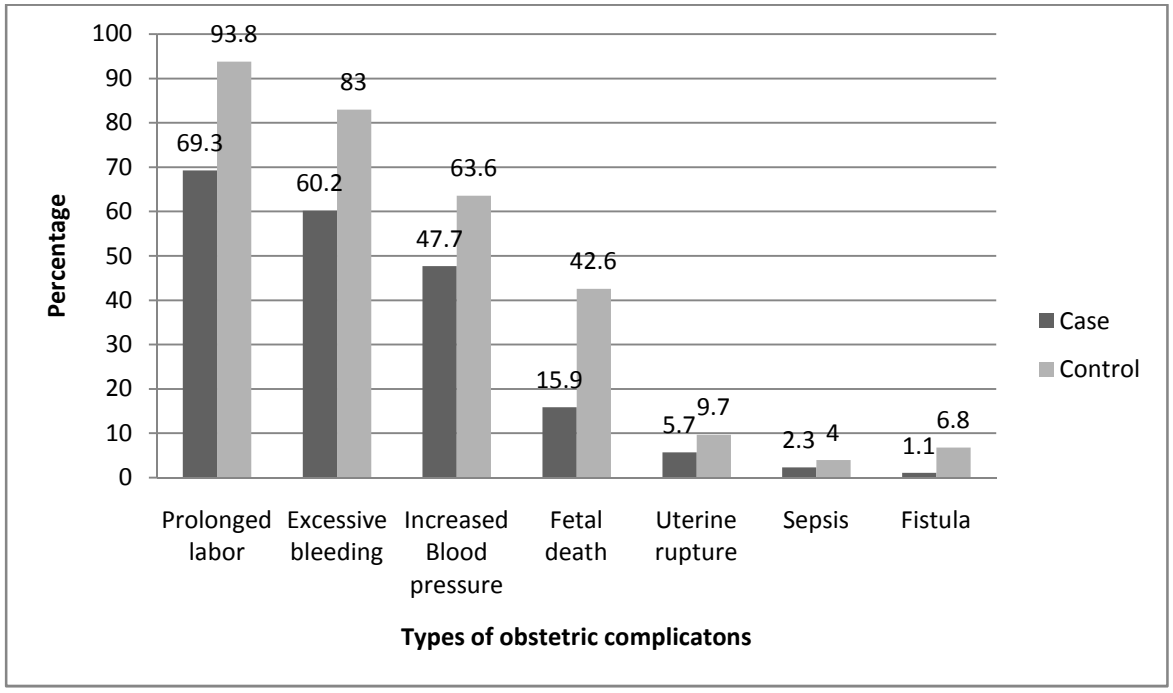


Figure 4: Percentage of obstetric complications mentioned by cases and controls in Abobo woreda, Gambella region, Southwest Ethiopia 2019.

Regarding to the danger signs of pregnancy, 53(60.2%) cases and 124(70.5%) controls mentioned blurring of vision as danger sign of pregnancy. From total 47(53.4%) cases and 99(56.3%) controls mentioned severe headache as danger signs of pregnancy. About 41(46.6%) cases and 99 (56.3%) controls mentioned high fever as danger signs of pregnancy **(Fig 5).**

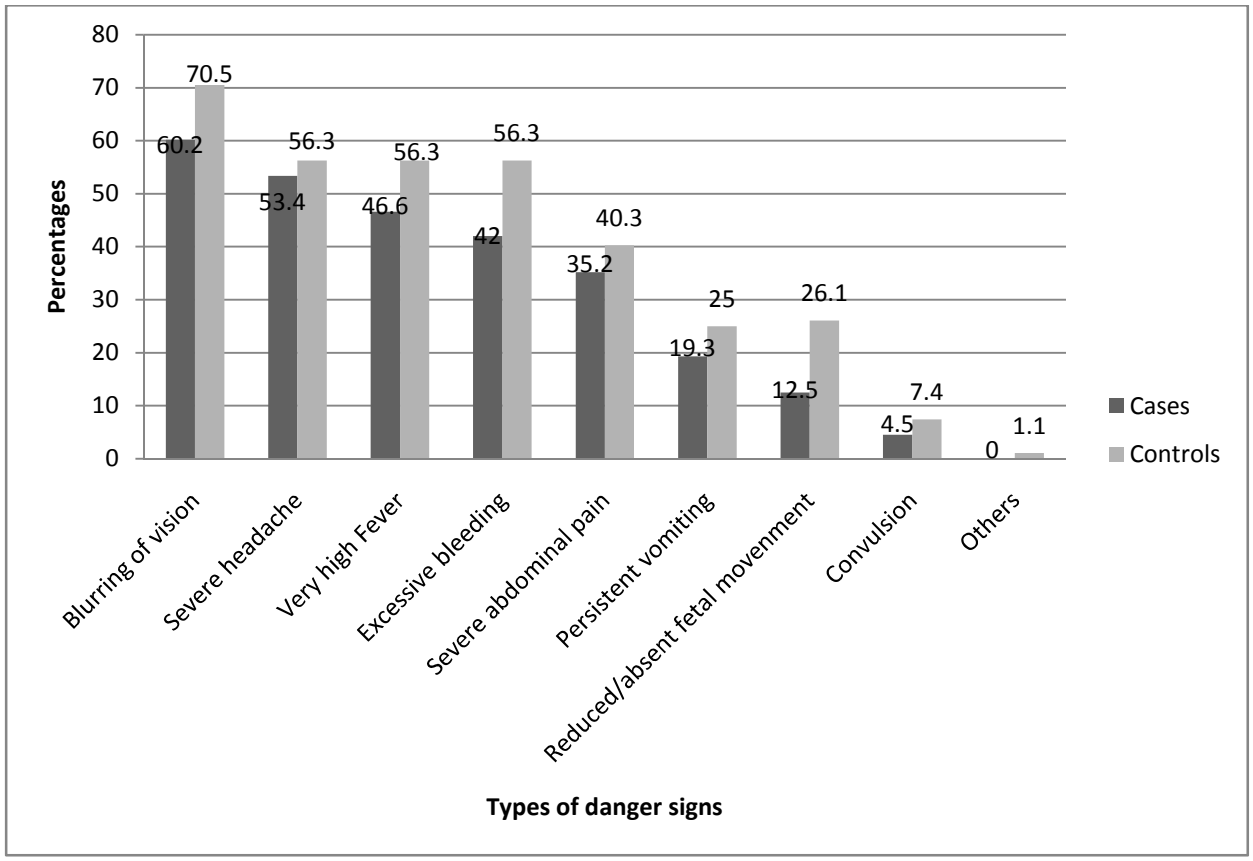


Figure 5: Percentage of danger signs of pregnancy mentioned by cases and controls in Abobo woreda, Gambella region, Southwest Ethiopia, 2019.

5.2. Enabling factors of cases and controls

5.2.1. Socio economic and health service related factors

Media exposure of both cases and controls were assessed by asking their exposure for three types of Medias namely television, radio and newspaper. Accordingly, 54(61.4%) cases and 86(48.9%) controls had no exposure to any type of media. Concerning the household wealth index, 20(22.7%) cases and 70(39.8%) controls were in the rich wealth tertile (category).

Regarding to health service related characteristics, majority of cases 87(98.9%) and controls 173(98.3%) mentioned that there was health facility in their residence (kebele). About travel time in minutes by foot to HF, 43(49.4%) cases and 112(64.7%) mentioned that it took less than 30 minute **(Table 4).**

In **Bivariate** analysis from all enabling factors media exposure, household wealth index, distance in kilometer from HF and means of transportations showed association with home delivery among mothers and considered as candidate for multivariable analysis (**Table 4).**

Table 4: Bivariate analysis of Socioeconomic and health service related factors of cases and controls in Abobo woreda, Gambella region, Southwest Ethiopia, 2019.

Variables	Category	Cases(88) No.%	Controls(176) No.%	COR(95%CI)	P value
Media exposure	No	54(61.4)	86(48.9)	1.66(0.99-2.8)	0.056*
	Yes	34(38.6)	90(51.1)	1	
Wealth index	Poor	41(46.6)	46(26.1)	3.12(1.63-5.98)	<0.001*
	Medium	27(30.7)	60(34.1)	1.58(0.80-3.09)	0.186*
	Rich	20(22.7)	70(39.8)	1	
Type of HF	Only HC	24(27.6)	46(26.6)	1	
	Both type	10(11.5)	19(11.0)	1.009(0.4-2.51)	0.985
	Only HP	53(60.9)	108(62.4)	0.94(0.52-1.70)	0.840
Accessibility of HF (Distance in KM)	≤ 5 KM	78(89.7)	169(97.7)	1	
	>5 KM	9(10.3)	4(2.3)	4.88(1.46-16.32)	0.010*
Means of Transportation	No	34(38.6)	48(27.3)	1.68(0.98-2.89)	0.061*
	Yes	54(61.4)	128(72.7)	1	

**** Significant at p<0.25; KM=Kilometer, COR=Crude Odds Ratio, CI=Confidence Interval***

Types of media commonly used

From those who had an exposure to media, majority 23(67.7%) cases and 55(61.1%) controls watches Television at least once a week, and seven(20.6. %) cases and 23(25.6%) controls were listen to the radio at least once a week **(Fig 6).**

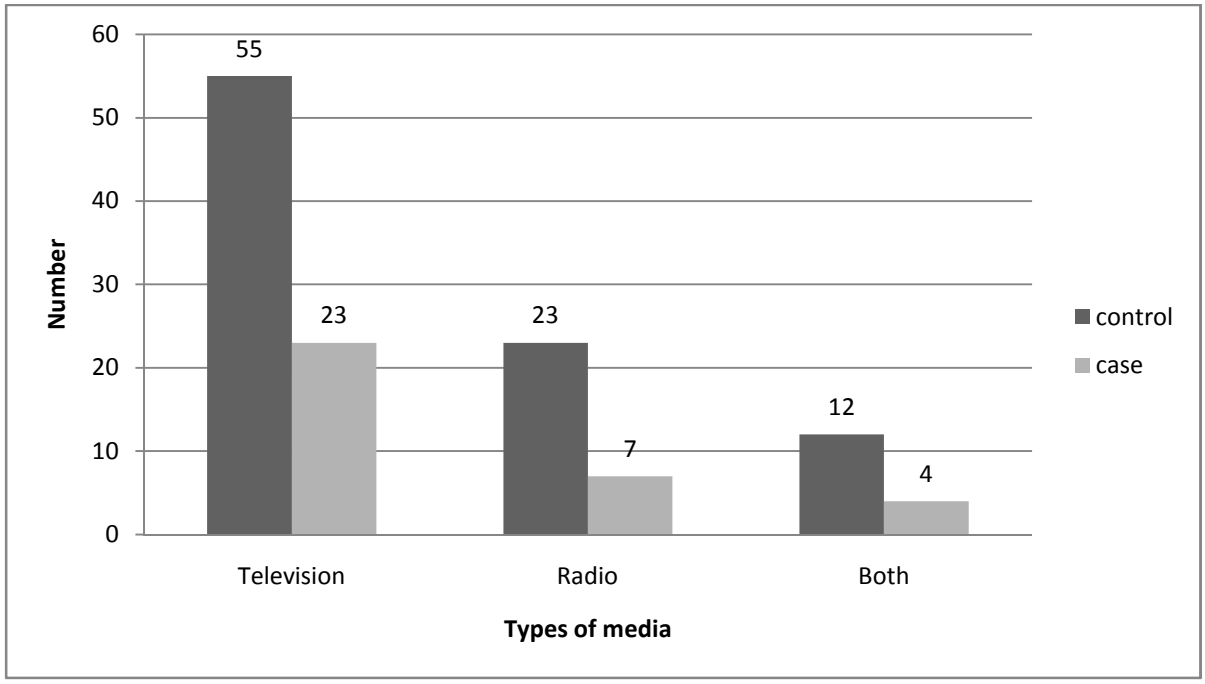


Figure 6:-Types of media commonly used by cases and controls in Abobo woreda, Gambella region, Southwest Ethiopia, 2019

5.3. Need based factors of cases and controls

Of total respondents 40(45.5%) cases and 142(80.7%) controls had history of ANC visit for her last pregnancy. From those who had ANC visit, 14(35.0%) cases and 103(72.5%) controls had four and above number of visit. Regarding to previous obstetric outcome 80(90.9%) cases and 156(88.6%) controls reported that they had not faced any obstetric problems during their last deliveries. From those mothers who had history of obstetric complications, seven (87.5%) cases and nine (45.0%) controls faced prolonged labor **(Table 5).**

In **Bivariate** analysis from need based factors, only ANC visit had shown association with home delivery among mothers and considered as candidate for multivariable analysis **(Table 5).**

Table 5: Bivariate analysis of need based factors of cases and controls in Abobo woreda, Gambella region, Southwest Ethiopia, 2019.

Variable	Category	Cases(88) No.%	Controls(176) No.%	COR(95%CI)	P value
ANC visit	No	48(54.5)	34(19.3)	5.01(2.86-8.79)	<0.001*
	Yes	40(45.5)	142(80.7)	1	
History of obstetric complication	No	80(90.9)	156(88.6)	1.28(0.54-3.04)	0.573
	Yes	8(9.1)	20(11.4)	1	
Plan for last Pregnancy	No	44(50)	76(43.2)	1.32(0.79-2.19)	0.295
	Yes	44(50)	100(56.8)	1	

significant at p-value<0.25, COR=Crude Odds Ratio, CI=Confidence Interval

5.4. Determinants of home delivery among mothers

In the bivariate analysis variables namely age of the mothers, educational status of mothers, husbands occupational status, parity, knowledge on danger signs of pregnancy, knowledge on obstetric complications, attitude towards delivery services, media exposure, household wealth index, distance from HF, means of transportation and ANC visit showed association (at p-value < 0.25) with home delivery.

After controlling all others variables in the multivariable analysis the following five variables were independent predictors of home delivery at p value <0.05. Accordingly; the odds of home delivery among mothers who had no formal education was around five times [AOR: 5.07, 95%CI :(2.18-11.50)] higher when compared with mothers who had secondary and above educational status. Also the odds of home delivery among mothers who had poor knowledge on obstetric complication was around four times [AOR: 3.83, 95%CI :(1.98-7.40)] higher when compared with mothers who had good knowledge on obstetric complications. In addition the odds of home delivery among mothers who had negative attitude towards delivery service was around three times [AOR: 3.25, 95%CI :(1.70-6.19)] higher when compared with mothers who had positive attitude.

In this study, the odds of home delivery among mothers who were in the poor wealth tertile was around five times [AOR: 4.55, 95%CI :(2.01-10.31)] higher when compared with mothers in the rich wealth category. The other factor that showed association with home delivery in this study was ANC visit. Accordingly, the odds of home delivery among mothers who had no ANC visit was three times [AOR: 3.29, 95%CI :(1.63-6.63)] higher when compared with mothers who had ANC visit **(Table 6).**

Table 6:- Multivariable analysis for determinant factors of home delivery among mothers in Abobo woreda, Gambella region, Southwest Ethiopia, 2019.

Variable	Category	Cases No.%	Controls No.%	AOR(95%CI)	P value
Educational Status of mothers	No Formal education	42(47.7)	29(16.5)	**5.07(2.18-11.50)**	**<0.001***
	Primary(1-8)	24(27.3)	72(40.9)	1.39(0.65-3.02)	0.394
	Secondary and above	22(25.0)	75(42.6)	1[R]	
Knowledge on obstetric complications	Poor	62(70.5)	58(33.0)	**3.83(1.98-7.40)**	**<0.001***
	Good	26(29.5)	118(67.0)	1[R]	
Attitude towards delivery services	Negative	58(65.9)	51(29.0)	**3.25(1.70-6.19)**	**<0.001***
	Positive	30(34.1)	125(71.0)	1[R]	
Wealth index	Poor	41(46.6)	46(26.1)	**4.55(2.01-10.31)**	**<0.001***
	Medium	27(30.7)	60(34.1)	1.78(0.78-4.07)	0.172
	Rich	20(22.7)	70(39.8)	1[R]	
ANC visit	No	48(54.5)	34(19.3)	**3.29(1.63-6.63)**	**0.001***
	Yes	40(45.5)	142(80.7)	1[R]	

R-Reference,* stastically significant at p-value<0.05, AOR=Adjusted Odds Ratio, CI=Confidence Interval

CHAPTER SIX: DISCUSSION

This study tried to identify different factors that could predict home delivery among mothers in Abobo Woreda of Gambella regional state. Hence, knowing these may help to focus the interventions on the identified factors in order to minimize home delivery. Accordingly, predisposing factors (educational status of mothers, knowledge about obstetric complications and attitude of mothers towards delivery services), enabling factors (household wealth index) and need based factors (ANC visit) were predictors of home delivery.

According to this study; from all Sociodemographic factors mothers' educational status remained as predictors of home delivery. Those mothers who had no formal education were more likely to give birth at home as compared to mothers who had secondary and above education. This finding is in line with other studies conducted in Bahirdar Ethiopia, South Tigray zone of Northern Ethiopia, Chandigarh of India, and Ghana (22,25,27,44). The possible explanation for this finding could be mothers who had no formal education are less likely to be aware about benefits of giving birth at HF, obstetric complications, and danger signs that a mother could face during pregnancy and delivery (48). Additionally, it is known that modern education is globally accepted strategy for improving institutional delivery services in general and to develop greater confidence to make mothers decision about their own health. The implication of this finding is improvements should be needed in women's social condition like educational status.

The present study has affirmed that mothers' knowledge on obstetric complications had significant association with home delivery. Accordingly, mothers who had poor knowledge on obstetric complications were more likely to give birth at home compared with their counter parts. This finding is lower in strength of association than a study done in Tanqua-Abergele district Tigray, Northern Ethiopia (37). This variation might be due to in that study composite score was used while in the current study mean score was used. There are also others studies done in Jabi Tehinan District of Northwest Ethiopia, Benishangul-Gumez region of Northwest Ethiopia and Bonga town, Southwest Ethiopia which indicated that mothers who had good knowledge on obstetric complications were more likely to prefer HF to give birth (39,40,49). The possible explanation for this finding could be knowledge on obstetric complication is the first step to seek appropriate and essential obstetric care. So those mothers with poor knowledge on obstetric

complications are less likely to seek essential obstetric care and that leads them to prefer home as place of delivery (50). The implication for this finding is strengthening the counseling session regarding danger signs of pregnancy and delivery should be needed.

The other determinant of home delivery in this study was attitude of mothers towards delivery service. Mothers who had negative attitude towards delivery service were more likely to prefer home as place of delivery as compared to mothers who had positive attitude. This finding is in line with a study done in Zala woreda, Southern Ethiopia (24). The possible explanation for this finding is mothers with negative attitude towards delivery services may have less motivation to give birth at HF due to negative information they have and that makes them to seek home as place of delivery.

From enabling factors, poor household wealth index was the only predictor of home delivery in this study. Mothers in the poor household wealth tertile were more likely to give birth at home when compared with mothers in the rich category. This finding is similar with a study done in Kenya and it was also supported by a survey done in Ethiopia (14,31). On the other hand, this finding is slightly higher in strength of association than a study done in Simada district of Amhara Region, Northwest Ethiopia (41). This difference might be due to in that study monthly income was used to measure economic status while household wealth index was used in this study. The possible explanation for this finding could be due to the reason that even though maternal health services are provided freely at health institutions, there may be directly and indirectly associated costs that mothers in the poor families cannot afford. In broad terms, financial capability of the family and costs related to transportation may not be afforded by mothers from poor households (51,52). These finding calls for simple interventions that can help empower women economically.

In this study from need based factors, having no ANC visit was predictor for home delivery.The odds of home delivery was higher among mothers who had no ANC visit. This finding is in line with a study conducted in Istanbul Turkey and South Tigray zone, Northern Ethiopia (33,44). On other hand, this finding is lower in strength of association than a study done in Tanqua-Abergele district, Tigray, Northern Ethiopia (37). The difference could be explained by the fact that mothers in that district had less exposure to media and no media exposure was also declared as

predictor for home delivery in that study and almost all of the study participants in that study were rural residents. The possible explanation for this finding might be due to absence of ANC visit leads mothers to had no information about their pregnancy status and that had influenced them to decide to give birth at home (53). This finding, thus, suggest that interventions targeting ANC visit for women's should be encouraged.

With regard to other correlates of home delivery, age of the mothers was not associated with home delivery in the current study. This finding is inconsistent with studies done in Ghana; Zala woreda of Southern Ethiopia and Ayssaita, Afar Ethiopia (22,24,29).This difference might be due to majority of respondents in this study were in age category of above thirty but in those studies majority were in young age group. Also place of residence was not significantly associated with home delivery in this study. This finding is inconsistent with studies done in Kalu woreda of South wollo zone Amhara region and Bahirdar, Ethiopia (27,30). Possible reason for this difference might be due to the fact that there is no much difference between both groups for these exposure factors in the current study.

Limitation of the study

- There could be recall bias, since mothers were asked for events that occurred in the last one year prior to the study and this could have biased the findings.
- Since data collectors were health workers social desirability bias was the other limitations of this study and it could have effect on the report of mothers.
- However, helping mothers to remember the events, adequate training given to data collectors, and their supervision could minimize the effects of recall bias and social desirability bias.

CHAPTER SEVEN: CONCLUSION

In this study, predisposing factors (like mothers educational status, knowledge on obstetric complications and attitude towards delivery services), enabling factors (household wealth index) and need based factors (like ANC visit) were positively and significantly associated with home delivery among mothers in Abobo woreda, Southwest Ethiopia. From the identified determinants majority were predisposing factors.

CHAPTER EIGHT: RECOMMENDATION

The following recommendations are made based on the finding of the study:-

For Gambella Regional state: Strengthening empowerment of women's educations, especially at least primary as well as continued health education, in order to fill observed gaps on the educational level should be made.

For Woreda health office:-Strengthening pregnant mothers conferences should be made in order to reduce home delivery by promoting all pregnant mothers to attend ANC visit.

For health workers: - Strengthening counseling session for all pregnant mothers by giving more focus on the danger signs of pregnancy and obstetric complications should be made.

For health extension workers:- To prevent mothers from home delivery; effective communication and encouraging mothers to attend ANC visits, increasing mothers awareness on danger signs of obstetric complications and also improving mothers attitude towards delivery service should be made.

For programme managers (NGOs):- Should make efforts to reduce home delivery by enhancing mothers' ability to earn and control income and more emphasis should be given for those in the poor household wealth index.

For researchers:-Further qualitative studies should be conducted to address the problems in detail and to come up with additional findings.

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Annexes

Annex I: English version questionnaire for mothers

Participant Information Sheet and Informed Consent Form:

Jimma University
Institute of Health
Faculty of Public Health
Department of Epidemiology

Good morning/afternoon dear participant! My name is_____

I am working as data collector for the study being conducted in this kebele by Asmelash Abera, who is studying for his master's degree at Jimma University, Institute of Health, and Department of Epidemiology in specialty of General public health. I kindly request you to lend me your attention to explain you about the study and being selected as the study participant.

The study title: Determinants of home delivery among mothers in Abobo Woreda, Anguwa zone, Gambella region southwest Ethiopia, 2019

Purpose of the study: The objective of this study is to determine factors associated with Home Delivery, among mothers in Abobo Woreda, Anguwa Zone, Gambella Region, Southwest Ethiopia in 2019. The finding of this study will help policy makers, Moreover, the information generated from this finding will provide different stake holders with an insight about this problem. It will also contribute to our understanding of home delivery to prevent it.

Procedure and duration: I will be interviewing you using questionnaire there are about 57 questions to answer where I will fill the questionnaire by interviewing you. The interview will take about 30-40 minutes, so I kindly request you to spare me this time for the interview.

Risks and benefits: The risk of participating in this study is very minimal, but only taking 30-40 minutes from your time. There would not be direct payment for participating in this study. But the findings from this research may reveal important information for the local health planners.

Confidentiality: The information you provide for us will be confidential. There will be no information that will identify you in particular. The findings of the study will be general for the study community and will not reflect anything particular of individual person. The questionnaire will be coded to exclude showing names. No reference will be made in oral or written reports that could link participants to the study.

Rights: Participation for this study is fully voluntary. You have the right to declare to participate or not in the study. If you decide to participate, you have the right to withdraw from the study at any time and this will not label you for any loss of benefits which you otherwise are entitled. You do not have to answer any question that you do not want to answer.

Contact Address: If there are any questions or enquires any time about the study or the procedure, please contact through the following address:

- Principal investigator: **Asmelash Abera,** E-mail, asme26abera@gmail .com or Mobile phone: +251920985794 or +251948235731

Verbal consent: Do you agree to participate in the study? (Encircle) 1. Yes 2. No

Signature of data collector_____

Thank you for your cooperation!!

English version questionnaire

Instruction: Circle the responses for questions with alternatives and write for open ended questions on the space provided. Do not read the alternative responses.

Identification	
1.Woreda Name:	6.Date of Interview: _____/_____/_____
2. Kebele:	
3. Village:	7.Time of start of interview: ----------
4.HH number:	
5. Questionnaire Code:	8.Time of end of interviewed: ----------
	Interviewer Name ----------
	Supervisor Name ----------

Part I. Predisposing Factors

Socio demographic related questions.

Code……..

Question No	**Questions**	**Choice of answers**	**Skip to ques. No**
101	Participants Place of Residence	----------	
102	How old are you?	…….Age in year	
103	Educational status of the mother	1. Unable to read and write 2. Able to read and write 3. ----------grade 4.certificate and above	
104	Educational status of the husband	1. Unable to read and write 2.Able to read and write 3. ----------grade 4.certificate and above	
105	HH family size in number	----------	
106	Ethnic origin	1. Anyuak 2. Kambata 3. Wolaita 4. Hadiya 5. Tigray 6. Amhara 7. Oromo 8. Majang	

		9. Others specify--------	
107	What is your religion?	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Other specify…	
108	Current Marital status	1. Married 2.Divorced . 3.Separated 4. Widowed 5. Others(specify)---------	
109	Occupational status of the mother	1.Housewife/Farmer 2.Government employee 3.student 4.Daily laborer 5.Merchant 6.Others(specify)---------	
110	Occupational status of the husband	1.Farmer 2.Government employee 3.student 4.Dailylaborer 5.Merchant 6.Others(specify)----------	
111	How much is your average monthly income in Ethiopian birr?	----------Ethiopian birr	
112	How many times you have been pregnant in your life?	----------	
113	What was the birth order of your recent child?	1. First 2. Second 3. Third 4. Fourth 5.Fifth and above	
114	Who decided the place for your child birth?	1.Self 2.With husband 3.Husband alone 4.HEWs 5.Others	

Knowledge & Attitude Related Questions

Instruction: Circle the responses for questions with alternatives and write for open ended questions on the space provided. Do not read the alternative responses.

Question No	Questions	Choice of answers	Skip to ques. No
Knowledge related questions			
201	Do you know any obstetric complications a woman might experience during labor and delivery?	1.Yes 2.No	If No skip to **203**
202	If yes for Q 201, what are they? Multiple responses are possible.	1. Prolonged/obstructed Labor 2. Bleeding 3. Increased blood pressure 4. Fetal death/Neonatal death 5.Uterine rupture 6.Sepsis 7. Fistula 8. Others----------	
203	Do you know any danger signs of pregnancy?	1. Yes 2. No	If No skip to **205**
204	If yes for Q203, what are they? Multiple responses are possible.	1.excessive vaginal bleeding/vaginal discharge 2. blurring of vision 3. Severe headache 4. Reduction/Absent fetal movement 5. Convulsions 6. Fever 7.severe abdominal pain 8.persistent vomiting 9. Others/specify.....	
Attitude related questions From the following expressed idea I want you to respond your agreement or disagreement by choosing alternative answers: Strongly disagree, Disagree, Not sure, Agree, Strongly agree			
205	Giving birth at HF is beneficial for your well being.	1. Strongly disagree 2. Disagree 3. Not sure 4. Agree 5. Strongly agree	

206	Giving birth at HF is beneficial to the newborn's well being.	1. Strongly disagree 2. Disagree 3. Not sure 4. Agree 5. Strongly agree	
207	Health professionals at HFs are skilled enough to detect delivery complications	1. Strongly disagree 2. Disagree 3. Not sure 4. Agree 5. Strongly agree	
208	Health professionals at HFs are skilled enough to treat or refer delivery complications	1. Strongly disagree 2. Disagree 3. Not sure 4. Agree 5. Strongly agree	
209	Health institutions in nearby are adequately equipped to provide delivery services.	1 Strongly disagree 2 Disagree 3 Not sure 4 Agree 5 Strongly agree	
210	Health institutions in nearby are staffed with skilled professionals to provide delivery services	1. Strongly disagree 2. Disagree 3. Not sure 4. Agree 5. Strongly agree	

Part II. Enabling Factors Related questions

Health service related factors

Instruction: Circle the responses for questions with alternatives and write for open ended questions on the space provided. Do not read the alternative responses.

Question No	Questions		Choice of answers	Skip to ques. No
301	Media exposure	Dou you watch Television at least once a week?	1.Yes 2.No	
		Dou you listen to the Radio at least once a week?	1.Yes 2.No	
		Do you read a newspaper at least once a week?	1.Yes 2.No	
		Do you access all three media at least once a week?	1.Yes 2.No	
302	Is there any health Facility nearby your resident?		1.Yes 2.No	If No skip to **306**
303	If yes to Q302, which type of health facility is available nearby your residence?		1. Health Center 2.Health post	
304	On average how far is the health facility from your home?		--------kilometer	
305	How long it takes to reach at health facility on foot?		----------minute.	
306	Have you ever taken any maternal health service from health institution?		1. Yes 2. No	If No skip to **313**
307	IF yes for Q306, did you satisfy with service you received?		1. Yes 2. No	If yes skip to **309**
308	If No for Q 307, what things made you unsatisfied with the Services provided at health facilities?		1.No drugs and supplies 2. Bad behavior of health workers 3.Lack of privacy 4. Long waiting time at health institution 5. Un availability of health care workers 6. Other specify	

309	How did you receive the services?	1.free 2.payment	If 1 skip to **311**
310	If you received on payment, how much did you pay for the service you had received?	----------Ethiopian birr	
311	How do you rate the approach of health workers?	1.Very Good 2.Fair/Good 3.Poor 4.Others specify------	
312	On average, how long did you wait between the time you arrived at facility and the time you got a Provider for the consultation?	----------in Minute	
313	What is the means of transport when a pregnant mother referred from Health post or community (TBA) to health center?	1. On foot 2. Public transport 3. Ambulance 4. Other specify ……..	
314	Do you have information that delivery service is available in health facilities (Health centers)?	1.yes 2.No 3.Don't know	
315	Do you perceive health facilities (Health centers) provide quality delivery services?	1.yes 2.No 3. Don't know	**If yes go to 401**
316	If No for Q315, what are the reasons?	----------	

Part III. Need Based Related questions

Instruction: Circle the responses for questions with alternatives and write for open ended questions on the space provided. Do not read the alternative responses.

Question No	Questions	Choice of answers	Skip to ques. No
401	Was your last pregnancy planned?	1. Yes 2. No	
402	Did you attend antenatal care during your last child pregnancy?	1. Yes 2. No	IF No skip to **405**
403	If yes to Q402, where did you attend?	1.Hospital 2.Health center 3. Health post 4. Others/specify-------	
404	If yes to Q402, how many visits you have for antenatal care?	1. one Times 2. Two Times 3. Three Times 4.Four and above	
405	If no to Q402, why did not you attend ANC for your recent pregnancy?	1.I didn't see any importance of antenatal clinic 2.Long distance to health institution from home 3.Bad behavior of health workers 4. Other specify----------	
406	Have you come across any obstetric difficulties in your last deliveries including the recent? (prolonged labor, hemorrhage,etc)	1. Yes 2. No	IF No Skip to **409**
407	If yes to Q406, what were the problems?	----------	
408	If yes to Q406, What specific measures were taken?	1. Nothing 2. Visited health institution 3. Massage, herbs, taking different soft drinks 4. Other (specify)_____	
409	Did you deliver your last baby at home?	1.yes(Home) 2.No(Health Facility)	IF health Facility Skip to **412**

410	If you delivered at home who assisted you during delivery?	1. TBA 2. Health Extension Worker 3. Close relatives/friends 4.Others/specify----------	
411	Why do you prefer to deliver at home? (More than one response is possible (Do not read the responses)	1.Lack of female health workers in HF 2. Health institution is far from my home 3.Lack of transport to health facility 4.Bad behavior of health workers 5.Sudden onset of labour 6. Husband Refuse 7.Strong belief of traditional birth attendants 8. Others/ specify ……	
412	Why you prefer to deliver at Health facility? (More than one response is possible) (Do not read the responses)	1.Save for my life 2.Close to my residence 3.Bad outcome with previous delivery 4. I was informed to deliver in health institution 5.Fear of complications 6.Others/specify ----------	
413	Have you ever given birth at Home before your recent birth?	1. Yes 2. No 3. I don't remember	IF No skip to **415**
414	If yes, in how many births?	----------	
415	Do you have any information about the benefit of delivery in health institution?	1.Yes 2.No	IF no skip **416& 417**
416	If yes for Q415, what are the benefits	1. Early detection of problems 2. Timely treatment of problems 3. Better new born care 4. Lower maternal postpartum morbidity 5. Other specify----------	
417	If yes for Q415, what is the primary source of information?	1. Health workers 2. Friends, neighbors 3. Media like TV/Radio 4. Other (specify)_____	

ASSESSMENT OF HOUSE HOLD ASSET

Asset type	Response		Quantity
Domestic animals			
Ox	No(0)	Yes(1)	
Cow	No(0)	Yes(1)	
Calf	No(0)	Yes(1)	
Sheep	No(0)	Yes(1)	
Goat	No(0)	Yes(1)	
Cock/Hen	No(0)	Yes(1)	
Horse	No(0)	Yes(1)	
Donkey	No(0)	Yes(1)	
Mule	No(0)	Yes(1)	
Durable assets			
Television	No(0)	Yes(1)	
Refrigerator	No(0)	Yes(1)	
Radio	No(0)	Yes(1)	
Electricity	No(0)	Yes(1)	
Conventional Telephone	No(0)	Yes(1)	
Mobile Phone	No(0)	Yes(1)	
Cycle	No(0)	Yes(1)	
Sofa	No(0)	Yes(1)	
Bed	No(0)	Yes(1)	
Table	No(0)	Yes(1)	
Chair	No(0)	Yes(1)	
Gold	No(0)	Yes(1)	
Ownership of owned Living House	No(0)	Yes(1)	
Ownership of Agricultural Land	No(0)	Yes(1)	
Productive Assets			
Hoe	No(0)	Yes(1)	
Plough Plow/shovel	No(0)	Yes(1)	
Bee hive	No(0)	Yes(1)	
Axe	No(0)	Yes(1)	
Housing Characteristics			
Indoor Plumping/Pipe Water	No(0)	Yes(1)	
Type of Flooring	Earth/Dung(0)	Cement/Raw Wood(1)	
Toilet Facility	Unsanitary or Traditional Pit or No(0)	Sanitary or Pit Improved(1)	

THAT IS THE END OF OUR INTERVIEW. THANK YOU VERY MUCH FOR TAKING THE TIME TO ANSWER THESE QUESTIONS

Annex II: Amharic Version Questionnaires

በጅማ ዩኒቨርስቲ

የህብረተሰብ ጤና ፋኩልቲ

የኤፒዲሚዮሎጂ ትምህርት ክፍል

የጥናቱ ማብራሪያ የፍቃደኝነት መጠየቂያ ስና መተማመኛ ቅጽ

ስሜ……እባላለሁ፡፡ አሁን እየሰራሁኝ ያለሁት በዚህ ማህበረሰብ ላይ ለሚደረገው ጥናት መረጃ ሰብሳቢ ሆኜ ለ አስመላሽ አበራ በጅማ ዩኒቨርስቲ በማህበረሰብ ጤና አጠባበቅ በማስተርስ ደረጃ ለመመረቅያ የሚሆን ጥናት ለማካሔድ ነው፡፡ ስለዚህ እንዴት ተሳታፊ መሆን እንደቻሉና ስለጥናቱ በተመለከተ ማብራሪያ እንድሰጥዎት የተወሰነ ጊዜ እንዲሰጡኝ በአክብሮት እጠይቃለሁ፡፡

የጥናቱርዕስ ፡ በአቦቦ ወረዳ የሚኖሩ እናቶች ከጤና ተቋም ወጭ ወይም ቤት ለምን እንደምወልዱ ስለ መዳሰስ ይሆናል፡፡

የጥናቱ አላማ፡ ከዚህ ጥናት የሚገኘው ውጤት ወሊድ አገልግሎት ዙሪያ የእናቶች የአጠቃቀም ሁኔታና የሚታዩ ችግሮችን ለወደፊቱ አገልግሎቱን ለማሻሻል የሚጠቅም የመፍትሔ ሀሳቦችን ለማመላከት ይረዳል ፡፡ከዚህ ጥናት የሚገኘው ውጤት የወረዳ ጤና ጥበቃ ፅ/ቤት እንዲሁም የዞንጤና መምርያ እና በ እናቶች እና ሕፃናት ጤና ዙሪያ የሚሰሩ ድርጅቶች ትክክለኛውን የአሰራር ቅየሳ እንዲይዙ ብቻ ሳይሆን የጤና ተቋም ወሊድ አገልግሎት አለመጠቀም በሁሉም መስክ የሚያስከትለውን ችግር በተግባር እንድፈቱ ያግዛል :: በተጨማሪም የዚህ ጥናት አላማ ለዋናው ተመራማሪ በማህበረሰብ ጤና ዘርፍ የማስተርስ ትምህርቱን ለማጠናቀቅና የመመረቅያ ፅሁፍ ለማዘጋጀት ይጠቅመዋል፡፡

የጥናቱ ሂደትና ጊዜ ፡ ለጥናቱ የሚያገለግሉና መረጃ ሊሰጡ የሚችሉ ጥያቄዎች ተዘጋጅተዋል እነዚህ ጥያቄዎች ጠቅላላ 57 ሲሆኑ በቃለ ምልልስ ጥያቄዎቹን ለመመለስ በግምት 30-40 ደቂቃ ይፈጃል፡፡

ጉዳትና ጥቅም ፡ በዚህ ጥናት በመሳተፍዎ ከሚወስደው ጊዜ በስተቀር የሚደርስቦት ጉዳት የለም ፡፡በጥናቱ በመሳተፍዎ የሚያገኙት ቀጥተኛ ጥቅም የለም ነገርግን ከጥናቱ የተገኙት ጠቃሚ መረጃዎች ስለጤና እና ጤናን በተመለከተ ለሚያቅዱ የሚመለከታቸው ባለድርሻ አካላት ይጠቅማቸዋል፡፡

ምስጢር አጠባበቅ ፡ የሚሰጡን መረጃ ሁሉ ምስጢርነቱ የተጠበቀ ነው ፡፡ ለዚሁም እርሶዎን የሚገልጽ ምንም ነገር የለም፡፡ለምሳሌ የእርሶ ስም መጠይቁ ላይ አይፃፍም :: የጥናቱ ውጤት ለግለሰብ ወይም ደግሞ ለቤቴሰብ ሳይሆን ለአጠቃላይ ነው፡፡

የተሳታፊው መብት ፡ በዚህ ጥናት ለመሳተፍ ሙሉ ፈቃደኝነት ያስፈልጋል፡፡በዚህ ጥናት የመሳተፍ ወይም ያለመሳተፍ ሙሉ መብት አለዎት፡፡ለመሳተፍ ከፈለጉ ደግሞ በማንኛውም ጊዜ በመሀል ራስዎን ከጥናቱ ማግለል (ማቋረጥ) ይችላሉ፡ካቋረጥኩኝ ጥቅም ይጎልብኛል ብለው አያስቡ፡፡መመለስ የማይፈልጉትን ማንኛውንም ጥያቄ አለመመለስ መብቶ ነው ::

አድራሻ፡ ስለጥናቱ አካሄድ ወይም ስለ ጥናቱ መጠይቅ ወይም ደግሞ ጥናቱን በተመለከተ ማንኛውም ጥያቄ ካሎት የሚከተሉትን አድራሻ ይጠቀሙ፡፡

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በፈቃደኝነት ላይ የተመሰረተ የስምምነት ማረጋገጫ፡

በጥናቱ ስመሳተፍ ደስማማለሁ? [1] **አዎን እስማማለሁ** [2] **አልስማማም**

የመረጃ ሰብሳቢዋ/ዉ ፊርማ _____

አመሰግናለዉ

መለያ ሚጂ	
1.የወረዳ ስም፡	6. መቲጃ የተሰበሰበበት ቁን: _____/_____/_____
2. ቀበሌ:	
3. ጎጥ:	7. ቃለ መጠይቁ የ ተጀመረበት ሰዓት:
4.የቤተሰቡ መለያ ቁጥር፡-	
5.የቃለመጠየቁ መለያ ቁጥር :	8. ቃለ መጠይቁ የ ተጠናቀቀቤት ሰዓት:
	የቃለመጠየቅ አድራግዉ ስም ----------
	የሱፐርቫይዘር ስም ----------

ክፍል ፤- የተሳታፊ የማህበራዊ /የዝንባሌ እና ኢኮኖሚያዊ **ሁኔታ**

ማሳሰቢያ: የተጠያቂዋን መልሶች በመልስ መስጫው ቦታ ላይ አከብባቸው/ፃፏቸው፡፡ የጥያቄውን አማራጮች ማሳሰቢያ ከተሰጣቸው ውጪ ሌሎችን አያንብቡላቸው፡፡

መለያ ቁጥር———

የጥ.ቁ	ጥያቄ	አማራጭ መልስ	ዝለል
101	የመኖሪያ ቦታ	----------	
102	ዕድሜዎ/ሽ ስንት ነዉ?	----------	
103	የተጠያቂዋ ትምህርት ደረጃ	1.ማንበብ እና መጻፍ የማትችል 2..ማንበብ እና መጻፍ የምትችል 3.----------ክፍል 4. ሴርትፍኬት እና ከዚያ በላይ	
104	የባለቤትሽ/የባለቤትዎ ትምህርት ደረጃ	1.ማንበብ እና መጻፍ የማይችል 2..ማንበብ እና መጻፍ የምችል 3.----------ክፍል 4. ሴርትፍኬት እና ከዚያ በላይ	
105	የቤተሰብ ብዛት	----------	
106	ብሔር	1. አኙዋሃ 2. ከምባታ 3. ወላይታ	

		4. ሀዲያ 5. ትግሬ 6. አማራ 7. ኦሮሞ 8. ማጃንግ 9. ሌላ ካለ ይገለፅ --------	
107	ሐይማኖት	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌሎች ካሉ ይጠቀስ…	
108	የጋቢቻ ሁኔታ	1. በትዳር ያለች 2. የፈታች 3. የተለያየች 4.ባል የሞተባት 5. ሌሎች ካሉ ይጠቀስ…….	
109	የተጠያቂዋ ስራ ሁኔታ	1. የቤት እመቤት/አርሶአደር 2. የመንግስት ሰራተኛ 3.ተማር 4. የጉልበት ሰራተኛ 5.ነጋዴ 6. ሌሎች ይጠቀሱ----------	
110	የተጠያቂዋ ባለበት የስራ ሁኔታ	1. አርሶአደር 2. የመንግስት ሰራተኛ 3.ተማር 4. የጉልበት ሰራተኛ 5.ነጋዴ 6. ሌሎችይጠቀሱ----------	
111	በአማካይ የእርሶ/የአንቺ የወር ገቢ ስንት የኢትዬጲያ ብር ነዉ ?	----------በኢ.ትዮጲያ ብር	
112	እስከ አሁን ድረስ ስንት ጊዜ እርግዝና ኖሮዎት/ሽ ያውቃል?	----------	

113	የአሁኑ ልጅ/ሽ ስንተኛዎ/ሽ ነው?	1.የመጀመርያ 2.ሁለተኛ 3.ሶስተኛ 4.አራተኛ 5.አምስተኛ እና ከዚያ በላይ	
114	የወሊድ ቦታዎትን የመረጠው/የወሰነዉ ማን ነው?	1.እኔ በራሴ ነው 2.እኔ እና ባለቤቴ 3.ባለቤቴ ብቻ 4.ጤና ኤክስቴንሽን ሰራተኛ 5.ሌላ (ይጠቀስ)----------	

የእናቶች የእውቀት መመዘኛ ጥያቄዎች

ማሳሰቢያ: የተጠያቂዋን መልሶች በመልስ መስጫው ቦታ ላይ አክብበባቸው/ፃፏቸው::
የጥያቄውን አማራጮች ማሳሰቢያ ከተሰጣቸው ውጪ ሌሎችን አያንብቡላቸው::

201	በወሊድ እና በሚጥ ወቅት የሚከሰቱ አደገኛ ችግሮችን ያውቃሉ?	1.አዎ 2.አላውቅም	አላዉቅም ከሆነ ወደ **203** ይለፉ
202	ለጥያቄ ቁ.201 መልስዎ አዎ ከሆነ አደገኛ ችግሮቹን ንገርኝ ከአንድ በላይ መመለስ ይቻላል (እንዳታነቢላቸው	1. ምጥ የመቆየት 2. ከማህፀን ደም መፍሰስ 3. የደም ግፍት መጨመር 4. የጽንሱ/የጨቅላ ህጻን መሞት 5.የማህፀን መፋረስ 6.የመበስበስ ሁናቴ/ኢንፈክሽን/ 7. ያልተለመደ የሰዉነት ክፍተት 8. ሌላ----------	
203	በእርግዝና ወቅት ሊከሰቱ የምችሉ አደገኛ ምልክቶችን ያውቃሉ?	1. አዎ 2.አላውቅም……..	አላዉቅም ከሆነ ወደ **205** ይለፉ
204	ለጥያቄ ቁ.203 መልስዎ አዎ ከሆነ አደገኛ ምልክቶችን ንገርኝ ከአንድ በላይ መመለስ ይቻላል (እንዳታነቢላቸው)	1.በእርግዝናወቅትከማህፀን ደም መፍሰስ 2. ከባድ የማዞር ስሜት 3. ከፍተኛ እራስ ምታት 4. የጽንሱ እንቅስቃሴ መቆም/መቀነስ 5. ማንዘፍዘፍ /እራስን መሳት 6.ትኩሳት	

		7.አደገኛ የሆድ ቁርጠት 8.የማያቋርጥ ትዉከት 9.ሌላ ካለ ይገለፅ……	

የእናቶች የግንዛቤ መመዘኛ ጥያቄዎች

ማሳሰቢያ: የተጠያቂዋን መልሶች በመልስ መስጫው ቦታ ላይ አክብበባቸው/ፃፏቸው፡፡ የጥያቄውን አማራጮች ማሳሰቢያ ከተሰጣቸው ውጪ ሌሎችን አያንብቡላቸው፡፡

205	በጤና ተቋም የሚሰጠዉን የወሊድ አገልግሎት መጠቀም ለአንቺ/ለእርሶ ጤንነት ይጠቅማል፡፡	1.በጣም አልስማማም 2.አልስማማም 3.እርግጠኛ አይደለሁም 4.እስማማለሁ 5.በጣም እስማማለሁ	
206	በጤና ተቋም የሚሰጠዉን የወሊድ አገልግሎት መጠቀም ለሚወለደዉ ጨቅላ ህጻን ጤንነት ይጠቅማል፡፡	1.በጣም አልስማማም 2.አልስማማም 3.እርግጠኛ አይደለሁም 4.እስማማለሁ 5.በጣም እስማማለሁ	
207	በጤና ተቋም የሚገኙ የጤና ባለሙያዎች ከወሊድ ጋር ተያይዘዉ የሚመጡትን ችግሮችን ለመለየት በቂ ሙያ አላቸዉ ፡፡	1.በጣም አልስማማም 2.አልስማማም 3.እርግጠኛ አይደለሁም 4.እስማማለሁ 5.በጣም እስማማለሁ	
208	በጤና ተቋም የሚገኙ የጤና ባለሙያዎች ከወሊድ ጋር ተያይዘዉ የሚመጡትን ችግሮችን ለማከም እና ሪፈር ለማድረግ በቂ ሙያ አላቸዉ ፡፡	1.በጣም አልስማማም 2.አልስማማም 3.እርግጠኛ አይደለሁም 4.እስማማለሁ 5.በጣም እስማማለሁ	
209	በአቅራቢያዎ የሚገኙ ጤና ተቋማቶች የወሊድ አገልግሎት ለመስጠት በቂ መሳርያዎች አሉት፡፡	1.በጣም አልስማማም 2.አልስማማም 3.እርግጠኛ አይደለሁም 4.እስማማለሁ 5.በጣም እስማማለሁ	

210	በአቅራቢያዎ የሚገኙ ጤና ተቋማቶች የወሊድ አገልግሎት ለመስጤት በቂ እና የተሟላ የጤና ባለሙያዎች አሉት	1.በጣም አልስማማም 2.አልስማማም 3.እርግጤኛ አይደለሁም 4.እስማማለሁ 5.በጣም እስማማለሁ	

ክፍል ሁለት-- የወሊድ ቦታ ለመምረጥ የሚያስችሉ/አስቻይ/ ሁኔታዎች

ጤና ድርጅትና አገሌግልትን በተመለከተ

ማሳሰቢያ: የተጠያቂዋን መልሶች በመልስ መስጫው ቦታ ላይ አክብብባቸው/ፃፏቸው::

የጥያቄውን አማራጮች ማሳሰቢያ ከተሰጣቸው ውጪ ሌሎችን አያንብቡላቸው::

የጥ.ቁ	ጥያቄ		አማራጭ መልስ	ዝለል
301	መገናኛ ብዙሃን ስለ መጠቀም	በ ሳምንት ቢያንስ አንድ ጊዜ ቴሌቪዥን ተከታትለዉ ያዉቃሉ?	1.አዎ 2. የለም	
		በ ሳምንት ቢያንስ አንድ ጊዜ ረድዮ አዳምጠዉ ያዉቃሉ?	1.አዎ 2. የለም	
		በ ሳምንት ቢያንስ አንድ ጊዜ ጋዜጣ አንብቢዉ ያዉቃሉ?	1. አዎ 2.የለም	
		በ ሳምንት ቢያንስ አንድ ጊዜ ሁሉንም ተጠቅመዉ ያዉቃሉ?	1.አዎ 2. የለም	
302	በአቅራቢያዎ የጤና ተቋም አለ?		1.አዎ 2.የለም	የለም ከሆነ ወደ **306** ይለፉ
303	ለጥ.ቁ 302 መልስዎ/ሽ አዎ ከሆነ ምን አይነት ጤና ተቋም ነዉ በአቅራቢያዎ ያለዉ?		1.ጤና ጣቢያ 2.ጤና ኬላ	
304	በግምት ስንት ኪሎ ሜትር ይሆናል ከቤትዎ/ሽ እስከ ጤና ተቋም ድረስ?		----- ----------ኪሎ ሜትር	
305	በግምት ስንት ደቂቃ ይወስዳል ከቤትዎ/ሽ እስከ ጤና ተቋም ድረስ?		----------ደቂቃ	
306	ከዚህ በፍት በጤና ጣቢያ የእናቶች የጤና አገልግሎት ተጠቅመዉ ያዉቃሉ?		1.አዎ 2.አላዉቅም	አላዉቅም ከሆነ ወደ **313** ይለፉ
307	ለጥ.ቁ 306 መልስዎ/ሽ አዎ ከሆነ በአገልግሎት ረክተዋል?		1.አዎ 2.አልረካዉም	አዎ ከሆነ ወደ **309** ይለፉ
308	ለጥያቄ ቁጥር 307 መልሶ አልረካሁም ከሆነ ምክንያቱ ምን ነበር?		1.መድንሃንት ስለሌ 2ባለሙያዎቹ መጥፎ ስነምግባር ስላላቸዉ 3.አመቺ ስላይደለ/የግል ሚስጥር ስለማይጠበቁ 4.ረጅም ሰዓት አገልግሎት ለማግኘት እንድንቆይ ስለምንገደድ 5.የጤና ተቋማት በስራ ገበታቸዉ ላይ በብዛት	

		አለመገኘታቸዉ 6. ሌላ ካለ ይገለፅ……..	
309	አገልግሎቱን እንደት ነበር የተቀበሉት?	1.በነጻ 2.በክፍያ	በነጻ ከሆነ ወደ **311** ይለፉ
310	በክፍያ ከሆነ ስንት ብር ይሆናል የከፈሉት?	----------ብር	
311	የጤና ባለሙያ አቀራረብ እንዴት ነው?	1.በጣም ጥሩ ነዉ 2.ጥሩ ነዉ 3.ጥሩ አይደለም/መጥፎ ነዉ 4.አላዉቅም	
312	በአማካይ ምን ያክል ደቂቃ ጤና ተቋም ከደረሱ በኃላ አገልግሎት ለማግኘት ይጠብቃሉ?	----------በደቂቃ	
313	ነፍሰጡር እናት ከጤና ኬላ/ከቤት ወደ ጤና ጣቢያ ርቆር ስትደረግ በምን አይነት ትራንስፖርት ነው የምትጓዝዘው?	1. በእግር 2. በህዝብ ትራንስፖርት 3. በአምቡላንስ 4. ሌላ ካለ ይገለፅ……..	
314	በጤና ተቋም (ጤና ጣቢያ) የወሊድ አገልግሎት እንደምሰጥ መረጃ አለዎት?	1. አዎ 2. የለም	
315	ጤና ተቋማቶች(ጤና ጣቢያዎች) ጥራት ያለዉን የወሊድ አገልግሎት ይሰጣሉ ብለዉ ይገምታሉ?	1. አዎ 2. የለም	አዎ ከሆነ ወደ ጥ.ቁ **401** ይለፉ
316	ለጥያቄ ቁጥር 315 መልስዎ የለም ከሆነ ምክንያቱ ምንድን ነው?	----------	

ክፍል ሶስት-- ከፍላጎት ጋር የተያያዙ ጥያቄዎች

የእናቶች ስነ- ተዋልዶ ና ፅንስ ሁኔታ

ማሳሰቢያ: የተጠያቂዋን መልሶች በመልስ መስጫው ቦታ ላይ አክብበባቸው/ፃፏቸው::

የጥያቄውን አማራጮች ማሳሰቢያ ከተሰጣቸው ውጪ ሌሎችን አያንበቡላቸው::

የጥ.ቁ	ጥያቄ	አማራጭ መልስ	ዝለል
401	የመጨረሻ እርግዝናዎን ለማርገዝ አቅደው ነበር ?	1. አዎ 2.የለም	
402	የመጨረሻ ልጅዎትን ባረገዙ ወቅት የቅድመ ወሊድ እርግዝና ክትትል አድርገው ያውቃሉ?	1. አዎ 2. አላዉቅም	አላዉቅም ከሆነ ወደ **405** ይለፉ
403	መልስዎ ለጥ.ቁ 402 አዎ ከሆነ የት ነዉ የቅድመ ወሊድ እርግዝና ክትትል ያደረጉት?	1.ሆስፒታል 2.ጤና ጣቢያ 3.ጤና ኬላ 4. ሌላ (ይጠቀስ)---------	
404	መልስዎ ለጥ.ቁ 402 አዎ ከሆነ ስንት ጊዜ የቅድመ ወሊድ እርግዝና ክትትል አድርገው ያውቃሉ?	1. አንድ ጊዜ 2. ሁለት ጊዜ 3. ሶስት ጊዜ 4. አራት ጊዜ እና ከዚያ በላይ	
405	መልስዎ ለጥ.ቁ 402 አላዉቅም ከሆነ ምክንያቱ/ቶ ምንድነዉ?	1.የቅድሜ ወሊድ ክትትል ጥቅሙ ስለማይታየኝ 2.ጤና ተቋሙ ሩቅ በመሆኑ 3.ከባለሙያዎቹ መጥፎ ስነምግባር የተነሳ 4.ሌሎች ካሉ ይጠቀሱ	
406	ባለፉት የወሊድ ታሪክዎ ወቅት ያጋጠመዎት ችግር ነበር ማለትም ከመጠን በላይ ደም መፍሰስ፣ ከ12ሰአት በላይ ምጥ መዘግየት እና የመሳሰሉት	1. አዎ 2. የለም	የለም ከሆነ ወደ **409** ይለፉ
407	መልስዎ ለጥ.ቁ 406 አዎ ከሆነ ችግሮቹ ምን ምንድናቸዉ?	----------	
408	መልስዎ ለጥ.ቁ 406 አዎ ከሆነ ምን አይነት እርምጃ ወሰዱ?	1.ምንም እርምጃ አልወሰድኩም 2. ወደ ጤና ተቋም ሄጃለሁ 3. መታሸት እና የተለያዩ እጾችን መጠቀም እንዲሁም ለስላሳ መጠጦችን መጠጣት 4. ሌላ (ይጠቀስ)----------	

409	የመጨረሻ ልጅዎትን ቤት ነው የወለዱት?	1. አዎ 2. አይደለም(በጤና ተቋም)	መልስዎ በጤና ተቋም ከሆነ ወደ **412** ይለፉ
410	በቤት ውስጥ በሚወልዱበት ወቅት ማን አዋለድዎት?	1. ልምድ አዋላጅ 2. የጤና ኤክስቴንሽን ባለሙያ 3. የቅርብ ዘመዶች 4. ሌላ ካለ ይገለፅ……..	
411	የመጨረሻ ልጅዎን ለምንድነው ቤት መውለድ የመረጡት? (ከአንድ በላይ መልስ ይቻላል)	1.በጤናተቋም ሰቶች የጤና ባለሙያዎች ስለሉ 2.ጤና ተቋሙ ከቤቴ ስለሚርቅ 3.የትራንስፖርት ችግር ስላሌ 4.የጤና ባለሙያዎች ስነምግባር ጥሩ ባለመሆኑ 5.ምጡ ቶሎ ስላፋፋመኝ 6. ባለቤቴ ስለተቃወመ 7.በልምድ አዋላጅ እምነት ስላለኝ 8.ሌላ ካለ ይገለፅ……	
412	ጤና ተቋም ውስጥ ለመውለድ የመረጡበት ምክንያት ምንድን ነበር?(ከአንድ በላይ መልስ ይቻላል)	1.ለህይወቴ ደህንነት አስተማማኝ ስለሆነ 2.ለመኖሪያየ ቅርብ ስለሆነ 3.የቀድሞ ወሊድ ጊዜ ችግር ስለነበረ 4. ጤና ተቋም ውስጥ እንድወልድ ስለተነገረኝ 5. የወሊድ ችግሮችን ስለምፈራ 6. ሌላ (ይጠቀስ)----------	
413	ከዚህ በፍት በቤት ውስጥ ወልደዉ ያዉቃሉ?	1.አዎ 2.አላዉቅም 3.አላስታዉስም	መልስዎ አላዉቅም ከሆነ ወደ **415** ይለፉ
414	መልስዎ አዎ ከሆነ ስንት ጊዜ ነዉ?	----------	
415	በጤና ተቋም ስለ መውለድ ጠቀሜታ መረጃ አለዎት?	1. አዎ 2. የለም	መልስዎ የለም ከሆነ **416 እና 417** ይለፉ

416	ለጥያቄ ቁጥር 415 መልስዎ አዎ ከሆነ ጠቀሜታዎቹ ምን ምንድናቸዉ?	1.በጊዜ ችግሮችን ለመለየት 2. በጊዜ ህክምና ለማግኘት 3. ለጨቅላ ህጻን እንክብካቤ 4. የእናቶችን ሞት ለመቀነስ 5. ሌላ (ይጠቀስ)----------	
417	ለጥያቄ ቁጥር 415 መልስዎ አዎ ከሆነ የመረጃ ምንጭዎ ምንድን ነው?	1. ጤና ባለሙያ 2. ተመሳሳይ እርዳታ ካገኙ ጓደኞች እና ጎረቤቶች 3.ከሬዲዮ ወይም ቴሌቪዥን 4. ሌላ (ይጠቀስ)----------	

የቤተሰቡ ሀብት/ንብረት ሁኔታ

የንብረት አይነት	**መልስ**		**ብዛት**
የቤት እንስሳት			
በሬ	1. አለ	2. የለም	
ላም	1. አለ	2. የለም	
ጥጃ	1. አለ	2. የለም	
በግ	1. አለ	2. የለም	
ፍየል	1. አለ	2. የለም	
ዶሮ	1. አለ	2. የለም	
ፈረስ	1. አለ	2. የለም	
አህያ	1. አለ	2. የለም	
በቅሎ	1. አለ	2. የለም	
ዘላቂ ንብረቶች			
ቴሌቪዥን	1.አለ	2. የለም	
ፍሪጅ	1.አለ	2. የለም	
ሬድዮ	1. አለ	2. የለም	
መብራት	1. አለ	2. የለም	
የማይንቀሳቀስ ስልክ	1.አለ	2. የለም	
ተንቀሳቃሽስልክ (ሞባይል)	1. አለ	2. የለም	
ሳይክል	1.አለ	2. የለም	
ሶፋ	1.አለ	2. የለም	
አልጋ	1.አለ	2. የለም	
ጠረጴዛ	1. አለ	2. የለም	
ወንበር	1. አለ	2. የለም	
ወርቅ	1. አለ	2. የለም	
የራስ መኖርያ ቤት	1. አለ	2. የለም	
የራስ የእርሻ መሬት	1. አለ	2. የለም	
ማመረቻ ንብረት			
መኮትኮቻ	1.አለ	2. የለም	
ማረሻ	1.አለ	2. የለም	
የንብ ቀፎ	1.አለ	2. የለም	
መጥረቢያ/ ፋስ	1.አለ	2. የለም	
የቤት ሁኔታ			
የውሃ ምንጭ	1. የቧንቧ	2. የቧንቧ ያልሆነ	
የወለል አይነት	1. ሲሚንቶ/አንጨት	2. መሬት	
የመጸዳጃ ቤት ሁኔታ	1.ንጽህናው የተጠበቀ/ዘመናዊ	2. ንጽህናው ያልተጠበቀ/ባህላዊ	

ይህ የቃለ መጠይቃችን መጨረሻ ነው:: "ለትብብርዎ በጣም እናመሰግናለን"

Annex III: Anywa Language Questionnaires

JÏMMA YÏNUBÖÖCÏTÏY

PAAKALÏTI MAR WEET JÖÖT DËËL

ØT-WËËLÖ MAR IPÏÏDÖMÖLÖJÏ

I. tier wëëlö ki met-ec man pëëny ïnï ki pïëc mo teengi-teengi ki ngäädhë mari

Nyenga cwøl ni _____ tïïc mara man tïïa en nø bee kwäänö mo tïïca bäät jø paac jï nyilaar göör mo nyenge cwøl acmilaac abara mo göödö ki riet dïgï-rïï jïmma yïnubööcithy mo gööra wëël koor jööt-dëël mar jø paac, ni tier kwäänö mare bee per warakata mano jiingi thuum göör tïïë ki køøre. Køøre kiper pïëc ki løk moi no ojiingngø piny kany ii yïïna dhaanhø aciel mo manyø kiper wäänö man kiper nee gïïa näk mo manynyø kiper kwäänö man nee dee luup mo cari-carø kipere. Køøre kiper mana cïpï caae moi jïra ïïna pwøa.

TIER KWÄÄNÖ

Kwäänö man kwäänö bäät mëëgu obwörë mo bëëdö ii warada mar abwöbö kiper nee bung lwaar uut-jenni ki lwaar mar-ge mïërï nee tiere kwany.

TIER GÏNA KWÄÄN WËËLÖ MAN KIPERE

-be per gïïu joot ki ri kwäänö man, be per gïïu nëënï ni reyø ii lwaar mar mëëgu obwörë nee jïtö ka acare mo løny ki man tiir ge ki gø ii nyïmë.

-gïïu joot ki køør kwäänö man, bïïc jööt-dëël mar abwöbö warada ki mïmïrïya mar jööt-dëël mar anywaa jöön ki dïrïjïdhë mo tïïö bäät obwörë ki mëëg-gi, nee jöör tïïc mar ge mana tiir ni patha man mka ge gø keere, kunyö kiper gïïu duu bäng lwaar øt-jaath ni reyø nee raanyi.

-be per nee kunyë ri ngati ni kwäänö bäät jööt-dëël mar jø paac kiper göör warakan thum riet dïgï-rïï man göörë en göörë ki køøre.

II JÖÖR WAATH KWÄÄNÖ MAN KI CAAE MOE

Pïëc moa näk ojiing-ngø nee kuny ge kiper kwäänö man thööth ge beet bee 57, ni pïëc ki løk pïëc no opëënyi ii ni näk mo okïth ya acaara caae mo kale nee thööth bee digiige mo30-40 keer ge.

KØNY KI BUNG KØNY MAR KWÄÄNÖ MAN

-kwäänö man öölö mano due ri opëënyï ki pïëc mo teengi-teengi nee patha nyï caae mo onøk okälë ri dhaanhø bung mør

-pïëc ki løk pïëc moi gïn mo dagø mo di joot ngato opëënyï ki ge mo räängö bung gø, ba gïïu joot ii kwäänö man kunyö jï jey mo otïïö bäät wääth mar jööt-dëël

II JÖÖR GWØK GÏÏA NÄK MO OCIMØ KI JEY

Gïïu caro beet be jammi mo okooro no ocimø, manynya gø nee ngäyu ni caro bëët gïn mo dagø mo bere ko odi ngääö ki ge ki ri cäänö maro bung-gø

NYUUDHÏ:-ngato opëënyi nyenge ba göör piny ii warakan pïëc

Kwäänö man køny mare patha per dhaanhø aciel wala jø paac aciel, be per jøw bëët

TEEK MAR NGATO PËËNYI KI MOI

Pïëc man manya dhaanhø mo ojïëy ki cwïnyë bare. Løny ki man jïëyï wala man kweeri. Ni näk ïïnu jïëy ki man pëëny thøw caa mano kööï ni ii ba many gø løny man kweeri gø.

Kär caari ni no ongøla gø gïnna da joodo käängngö, bung gïn mo di joodo re.

Pïëc mo kkri manyø nee dwøgi no opëëny ïïnï ki gø jïrï da teek man ba dwøgi gø

GÏÏU JOOT WÄÄ KWÄÄNÖ MAN KI GE

Nyenge: - Acmilaac Abara **kwään ogut mare** :-(+251)-920985794/ (+251)-948235731

Imëël mare:-asme26abera@gmail.com

Jey mo ojïëy no ocïp dëët-ge ki met-ec mar-ge gïnu ngäädh ge ki gø

Ïïnï ojïëy ni I pëënyi ki pïëc moi (1) Aano ojïëy (2) Aker jïëy

Ngïï mar ngata pëëö _____

UUNA PWØ

PÏËC MOA NÄK CÄÄNÖ KIPER KANYA TÏÏC KWÄÄNÖ YIE	
1. Nyeng warada	6. nïr dwääy moa tïïc pïëc yie
2. Kabale	7. caae moa cak pïëc yie
3. Atut	8. nyeng ngata pëë
4. kwään pach mare	
5. kwään warakan pïëc	nyeng ngata neet pïëc

TÄK PÏËC 1.II NËËNÖ MAR BËËT NGATO OPËËNYÏ

ANGÖÖNA GØ PINY:-løk pïëc moo duu ngat opëënyi manya gø nee göör piny kwöra ngamø wala nee lwek.

:-ni näk patha løk pïëc moa näk ogöör piny bängë møøk mo kwaani ki wïï jaak

TIEL	PÏËC	LØK PÏËC	PÄÄRÏ
101	Kar bëëtö	_____	
102	Cwiiri	_____	
103	Göör mari	1. kwäänö ki göör ba løny jïrë 2. kwäänö ki göör løny jïrë 3. göödö yaa _____ 4. cärthïpikëët ki maal	
104	Göör mar cwøri	1. kwäänö ki göör ba løny jïrë 2. kwäänö ki göör løny jïrë 3. göödö yaa _____ 4. cärthïpikëët ki maal	
105	Kwään jø paac	_____	
106	Wï jur mari	1. Anywaa 2. Kambaatha 3. Walayitha 4. Adiyya	

		5. Thïgïre 6. Amäära 7. Orømø 8. Majang 9. Mør nee daaø göörï _____	
107	Jwøk mari	1. Ørthødøk 2. mucïlïm 3. pørøthecthan 4. kathølik 5. mør nee daaø göörï	
108	Nywöm mari	1. dhaanhø mo onywømø 2. dhaanhø mo geno pääö ki cwøre 3. cwøre ee kweerø 4. cwore othøw 5. mør nee daaø göörï_____	
109	Tïïc mari	1.dhaang paac/ngat puur 2.ngat tïïa akwoma 3.ngat tïï teek bäädï 4.ngat nyigadha 5.ii tïïö bangnga akwöma 6.mør nee daaø göörï_____	
110	Tïïc mar cwøri	1.ngat puur 2.ngat tïïa akwoma 3.ngat tïï teek bäädï 4.ngat nyigadha 5.ii tïïö bangnga akwöma 6.mør nee daaø göörï_____	
111	Bïrrï mo ojooti ki yi dwääy ki bïïc ithopiya	_____	
112	Këët kar kany akwöre adïï otïmö ena maal	_____	

113	Nyilaal man nut jïrï ennø amane regi	1. mana dikwøng 2. riet geni 3. dääa ge 4. ngweer ge 5. abïïc ki maal	
114	Kar lwaa mari ngata jier gø anga?	1. aani keera 2. waani ki cwøra 3. cwøra keere 4. mør nee dagø göörï 5. _____	

ANGÖÖNA GØ PINY:-løk pïëc moo duu ngat opëënyi manya gø nee göör piny kwöra ngamø wala nee lwek.

: - Ni näk patha løk pïëc moa näk ogöör piny bängë møøk mo kwaani ki wïï jaak

tiel	**Pïëc**	**Løk pïëc**	**Päärï**
201	Nyuuthë mo ojwør nil eth ri nyäädï ki lwaar ngääyï?	1.Ngääa 2.kwuua	Ni näk mo köö ni kwuua pööth bang pïëc mana en ri tiel mo 203
202	Kiper pïëc mana ri tiel mo 201 løk pïëc mari ni näk mo köö ni ngääa, ngïï mana teek døc caani jïra(løny man cääni ki mo kaala aciel ki maal)	1. ruuö mar nyäädï 2. cwër mar remø mo dwøng 3. ngørø mar waath remø mëëtö 4. thøw nyilaal mano lwaarø ki gø 5. räny kar lwaar mar mi nyilaali 6. juul mo dwøng dikälö 7. ööl dëël mo dwøng dikälö 8. mør nee daaø gööri_____	
203	Kanyo tïm dhaanhø ni ngëëtë ena maal, ngïïcë mo ojwør nil eth dagø mo	1. Dagø 2. bung-gø	Ni näk mo köö ni bung-gø pööth bang pïëc mana en ri tiel mo 205

	ngäyï?		
204	Kiper pïëc mana en rii tiel mo 203 løk pïëc ni näk mo köö ni dagø, mana teek døc caani jïra (løny ki man cääni ki mo kaala aciel ki maal)	1. waath remø mo dwøng deer dhaanhø 2. wïïr wïc mo dwøng 3. tuung dëël mar nyilaal mano en ec cungngö 4. kuc dëël tïmö ni dagø 5. ïïëth dëël 6. ec tïmö ni nyämmö døc 7. rääm wïïc mo dwøng 8. ngøø mo ba cungngi 9. mør nee daaø göörï _____	

PÏËC MO RØM NGETH MAR MËËGU OBWÖRË KI GE

ANGÖÖNA GØ PINY:-løk pïëc moo duu ngat opëënyi manya gø nee göör piny kwöra ngamø wala nee lwek :-ni näk patha løk pïëc moa näk ogöör piny bängë møøk mo kwaani ki wïï jaak

TIEL	PÏËC	LØK PÏËC	PÄÄRÏ
205	køny mar lwaar manø cïp øt jaath i caarø ni kunynyø kiper jööt dëël mari	1. abangäädhö døc 2. abangäädhö 3. yiea teek 4. angäädhö 5. angäädhö døc	
206	køny mar lwaar manø cïp øt jaath i caarø ni kunynyø kiper jööt dëël mar nyilaal mano lwaarø ki gø.	1.abangäädhö døc 2.abangäädhö 3.yiea teek 4.angäädhö 5.angäädhö døc	

207	Akïïmë mo en øt-jaath, gïïu leth bëët otägi ii lwaar løny man tïme ni ngeth göör mo dwøng dagø jïgï, ni løny man jier ge gïïö ge ni man agïn- man agïn ocïp ge gø piny ni kare	1.abangäädhö døc 2.abangäädhö 3.yiea teek 4.angäädhö 5.angäädhö døc	
208	Akïïmë mo en øt-jaath, gïïu leth bëët otägi ii lwaar løny man tïme ni ngeth göör mo dwøng dagø jïgï,m løny man køny- ge gïïö ge ki gø wala man jääng-ge gø?	1. abangäädhö døc 2. abangäädhö 3. yiea teek 4. angäädhö 5. angäädhö døc	
209	Uut-jenni mo en buutu kiper ne ge cïp ge ki køny ri lwaar, løny man dee jap tïïc mo orømø ïth-ge?	1. abangäädhö døc 2. abangäädhö 3. yiea teek 4. angäädhö 5. angäädhö døc	
210	Uut-jenni mo en buutu kiper ne ge cïp ge ki køny ri lwaar, løny man dee akïïmë mo pang wala mo orømø ïth-ge?	1. abangäädhö døc 2. abangäädhö 3. yiea teek 4. angäädhö 5. angäädhö døc	

RIET PÏËC 2.GÏÏU KÄNI KI JÏËR MAR KAR LWAAR KI KØNY MANO CÏP UUT-JENNI JÖÖT-DËEL

ANGÖÖNA GØ PINY:-løk pïëc moo duu ngat opëënyi manya gø nee göör piny kwöra ngamø wala nee lwek.

:-ni näk patha løk pïëc moa näk ogöör piny bängë møøk mo kwaani ki wïï jaak

TIEL	**PÏËC**		**LØK PÏËC**	**PÄÄRÏ**
301	jammi mo	Ki yi jwøk i nëënö ki Tëëlëbïjïn yie aciel?	1. Awïnynyö 2. aba wïnynyö	

	winy acaare mwøa nyärö ki ge	ki yi jwøk i wïnyö ki raadïö ki yie aciel?	1.awïnynyö 2.aba wïnynyö	
		Ki yi jwøk i kwäänö ki wëëlö yie aciel?	1.awïnynyö 2.aba wïnynyö	
		Ki yi jwøk dëëri kønyi kønyø ki ge bëët?	1.awïnynyö 2.aba wïnynyö	
302	Øt-jaath mo kare can ïïnï dagø?		1. Dagø 2. bung-gø	Noo kööë ni bung-gø wør päär ri tiel mo 306
303	Kiper pïëc mana en rii tiel mo 302 ni näk ii köö ni dagø, ateeng øt-jaath ni kare can ki ïïnï?		1. øt-jaath mana riek meet/thena-thabiya 2. kïlïnïk/thena-këëla	
304	Noo ocaari gø jaak bär mar øt-jaath ki paac mari time ni kïïlö-mëëthïrï adïï?		------ ki kïïlö-mëëthïrï	
305	Ïtha kiic øt-jaath ki paac mari a digiige adïï no okälë?		----------digiige mo ki piny	
306	Ki ïth caae mo opöödhö køny mano jï mëëgu obwörë øt-jaath ïïnu jïtö ki gø		1.aano jïtö 2.kwuua	Noo kööë ni kwuua wør päär ri tiel mo313
307	Kiper pïëc mana en rii tiel 306 løk pïëc mare näk mo köö ni aano jïtö ki køny, køny mana cïp jïrï ïïna røm ki gø?		1. aano røm 2. aker røm	Ni näk mo köö ni eno røm päär ri tiel 309
308	Kiper pïëc mana en rii tiel 307 løk pïëc mari köö na aker røm bung room mari tiere angøni?		1. kiper mana näk bung kïïnë 2. per ana näk mo ba beer, gïno caan dhaanhø waac ge waaø ji jey møk 3. per mana näk bëët akïïmë raac	

		4. per mana näk mo jøw ruu ki caae mo thööth nib a laar jïtö ki køny 5. per mana näk mo joo tïïö ø-jaath ge ba joot caar 6. mør nee dagø göörï------	
309	Køny mana cïp jïrï kar kaaca ocïbö ki jöö mo nyïëdï jïrï?	1. cïp ki wat 2. cool ki gwel	Ni näk mo köö ni cïp ki wat päär ri tiel 311
310	Ni näk mo cool ki gwel, a gwel adïï ni cooli kar kaaca?	_____	
311	Gääbö maro ka akïïmë nyïëdï ni bëëdë?	1. beer døc 2. beer 3. ba beer/raac 4. kwuua_____	
312	No ocaari gø, kanyo pïïyï øt-jaath, a digiige adïï no obeeti nib a laar jïtö ki køny?	_____	
313	Mëëgu obwörë moa näk ngeet-ge ena maal, kanyo tïm-ge nig e manya lwaar ge ena mïërï mo ge kiper ge jäängngi kïïnïk wala øt-jaath mana dwøng, a nyeng jïëthë mo nyïëdï no jääng-ge ki gø?	1. ki tiel 2. jääy mar nyigadha 3. ambulaanci 4. mør nee daaø göörï ------	
314	Ki man näk lwaar øt-jaath køny dagø jïrë, di ngäyi kipere?	1. di gïn mo ngääa 2. bung g mongääa	
315	Dïëtu diëdø ni uut jenni (Theena thabia) gi cïpö ki køny Mar please mo wøpe/beer?	1.di gïn mo ngääa 2.bung g mongääa	Ni näk mo köö ni bung gïn ngääë päär ri tiel 401

316	Kiper pïëc mana en rii tielmo 315 ni näk kööö ni di gïn mo ngääa, køny mare agïna-ngø ki gïna-ngø?	----------	

NGWEER PÏËC 3.PÏËC MOA NÄK RIGE GUDÖ KI GÏÏU MANY DHAANHE

ANGÖÖNA GØ PINY:-løk pïëc moo duu ngat opëënyi manya gø nee göör piny kwöra ngamø wala nee lwek.

:-ni näk patha løk pïëc moa näk ogöör piny bängë møøk mo kwaani ki wïï jaak

TIEL	PÏËC	LØK PÏËC	PÄÄRÏ
401	Løny ma time ni gïn mo ii cïp piny ki man tïm ngëëtï ni ena maal ne per tïmö ni mara anguudï mari?	1. Dagø 2. bung-gø	
402	Kanya tïm ngëëti ni ena maal ki nyilaal mara anguudï, løny man time ni ïinu cäädhö kwöru neet jööt-dëël mar mëëgu obwörë ko obwörë mo käär-ge ki ïth-ge yie?	1. aano cäädhö 2. aker cäädhö	Ni näk mo köö na aker cäädhö pööth bang pïëc mana en ri tiel mo 405
403	Kiper pïëc man ni ri tiel mo 402, løk pïëc mari ni näk mo köö ni ano cäädhö, akwör jööt-dëël moe ni cäädhï ïth-ge?	1. øt-jaath mana riek mëëth/thene-thabiya 2. kïlïnïk 3. paac 4. mør nee daaø göörï	
404	Kiper pïëc man ni ri tiel mo 402, løk pïëc mari ni näk mo köö ni ano cäädhö, akwörë adïï ni cäädhï?	1. yie aciel 2. kwörë ariew 3. kwörë adäk 4. kwörë angween ki maal	
405	Kiper pïëc man ni ri tiel mo 402, løk pïëc mari ni näk mo köö ni ii ker cäädhö, tier bung wääth mari angøøni?	1. per mana näk køny mare kwuua 2. per mana näk kar øt-jaath bäär 3. per mana näk tïïë mo reyø dagø mo nëënö	

		ki banganga akïïmë 4. mør_____	
406	Ki ïth lwaar moi moa näk opöödhö wala lwaar mari mana näk opöödhö, di gïnmo leth mo opïï dëërï, ka teeng cwëër mar remø mo dwøng wala ruuö mar nyäädï ki møk jaak?	1. Dagø 2. bung-gø	Ni näk mo köö ni bung-gø pööth bang pïëc mana en ri tiel mo 409
407	Kiper pïëcmana en ri tiel mo 406, løk pïëc mari ni näk mo köö ni dagø, gïïa leth ni näk opïï dëërï agïïa ngø?	_____	
408	Kiper pïëc mana en ri tiel mo 406, ni näk mo løk pïëc mari köö ni dagø?	1. bung gïn mo yaa tïïö 2. ana aa øt-jaath 3. ana amat køøre ana määdhö ki laclaace mo teengi teengi 4. mør nee daaø göörï_____	
409	Nyilaal mari mara anguudï ïïnu lwaar kaae ki gø?	1. paacc 2. .øt-jaath	Ni näk mo köö ni ji lwaara øt-jaath pööth bang pïëc mana en ri tiel mo 412
410	Kanya lwaari paac ïïnu lwaara cer nga?	1. ngat lwaar mar køøngngö 2. ngat thena-ikthencïn 3. ceng tuung-wa 4. mør_____	
411	Paac ii jierø kiper ni Iwaari yie ki nyilaalmari mara anguudï	1. per mana näk akïïmë mo øt-jaath 2. per mana näk kar øt-jaath bäär ki paac	

		3. per bung jay 4. pre mana näk bëëta akïïmë raac 5. per mana laar nyäädï rwäänhö dëëra 6. per mana kweer cwøra 7. per mana näk ma abangäädhö kin gat lwaar mar køøngngø 8. mør nee dagø_____	

412	Gïna jieri lwaar øt-jaath,aper ngø?	1. Per mana näk jwïëy moa di gwøø yie 2. per mana näk kare can ki paac 3. per mana näk di gïn mo raac mo otägö dëëra kaa bëëda ni ngëëta ena maal 4. per mana näk mo ocaanø jïra no wør lwaara øt-jaath 5. per mana näk ma alwäär ki gïïu otägi ri lwaar 6. mør nee daaø_____	

413	Ki kany mo yie bäär, løny man time ni ïïnu lwaar paac?	1. ano lwaar 2. aker lwaar 3. wïïa bapara	Ni näk mo köö ni eno lwaar paac, wør pööth bang pïëc mana en ri tiel mo 415
414	Ni näk løk pïëc mari köö ni ano lwaar paac, akwörë adïï?	_____	
415	Kiper mano lwaaro øt jaath køny mare di gïn mo ii wïnyö kipere	1. Be Kare 2. Bang gø	Ni näk mo köö ni bung-gø pööth bang pïëc mana en ri tiel mo 416 & 417
416	Kiper pïëc 415 løk pïëc mare ni näk mo tïmö ni be kare køny mar ge agïna ngø ki gïna ngø?	1. öölö mano tägi ki ri lwaar nee laar joot 2. Kiper nee laar jïtö ki køny mar øt jaath 3. Kiper nee nyilaal mano lwaaro ki gwøk 4. Thøø mar mëëgo nee døø peny 5. Ni mo di møøk(nee di møøk cïp)	
417	kiper pïëc 415 løk pïëc mare ni näk mo tïmö ni be kare uu wïnyö bang nga ?	1. Øt Kath 2. Kanyo näk mo da jami mo teengi teengi ki bang nyïea wäädi wala jøøa atut. 3. Raadieø Wala Tëëlëbijïn 4. Ni näk mo di møøk(caani)	

Øna pïï yaa anguun pïëc ki løk pïëc marø: Kiper mana kønyo aani uuna pwøa.

Tiel VI, pïëc kiper jap kwärö mo jløny kiman caani gø ni näk mo jammi moi no ogöörö piny kany ii dagø paac mari

Lääc paac	Løk pïëc	
Rwaath dhieng		
Maath dhieng	dagø	Bung-gø
Røømø	dagø	Bung-gø
Atea	Dagø	Bung-gø
Gääng-ngu	dagø	Bung-gø
Arëën	dagø	Bung-gø
Thwønh gwienø ki math gwienø	dagø	Bung-gø
Thelebïjïn	dagø	Bung-gø
Riidiø	dagø	Bung-gø
Maac	dagø	Bung-gø
Thalaya		
Ogut mar øttø	dagø	Bung-gø
Ogut mar cenø	dagø	Bung-gø
Jäy (thorobïïl)	dagø	Bung-gø
Atät-tät	dagø	Bung-gø
Okweeny nyweenyö	dagø	Bung-gø
Gääny arëën	dagø	Bung-gø
Warki	dagø	Bung-gø
Paac mari	dagø	Bung-gø
Pwödhö mari	dagø	Bung-gø
Jap koony	dagø	Bung-gø
Liy	Dagø	Bung-gø
Caala	Dagø	Bung-gø
Akaapa	dagø	Bung-gø
Magaada	dagø	Bung-gø
Reek		
Bøng-ngø mar kïc mana nyään	dagø	Bung-gø
Bøng-ngø mar kïc mana näk orwöö	dagø	Bung-gø
pïÏ mo bömbaa	dagø	Bung-gø
Øttø	dagø	Bung-gø
Øttø opwöö ki ngø		
Øt – laac	dagø	Bung-gø
Cööpa	dagø	Bung-gø
Pëëm	dagø	Bung-gø
Tharobiica	dagø	Bung-gø
Bung-gøwa	Dagø	Bung-gø
Këënö mana näk tïïö ki maac	dagø	Bung-gø

Annex IV: English version checklist used during survey.

Instructions: Register only mothers who gave birth at home and at HF in the last one year. Do not include mothers who gave birth out of the study area and who are critically ill.

S.no	Name of Mothers	Name of kebele	Name of Village	Delivery status(Home=1, HF=0)	House hold No	stay (1,≥6month & 2, <6 month)	Remark

Annex V: Amharic version checklist used during survey.

ክልል፡- ጋምቤላ ፤ **ዞን ፡-**አኙዋ፤ **ወረዳ፡-** አቦቦ **ቀበሌ፡----------**

ማሳሰቢያ፡- ከታች ባለዉ ሠንጠረዥ ዉስጥ ባለፈዉ አንድ ዓመት ጊዜ ዉስጥ የወሊድ አገልግሎት የሰጡ እናቶች ብቻ ይመዝገቡ፡፡የጤና ችግር ያለባቸዉ እናቶች(ማለትም መስማት የማይችሉ፤መናገር የማይችሉ እና በጠና የታመሙ) እና ከወረዳዉ ዉጭ የወለዱ እናቶች እናዳይመዘገቡ፡፡

ተ.ቁ	የእናቶች ስም ዝርዝር	ቀበሌ	ጎጥ	የወሊድ ቦታ		የቤተሰብ መለያ ቁጥር	በቀቤለዉ የኖሩበት ጊዜ		ምርመራ
				ቤት(1) ✓	ጤና ተቋም(0) ✓		ከ 6 ወር በታች ✓	ከ 6 ወር በላይ ✓	

መረጃዉን የሞላዉ ስም**———————————————ፊርማ———————————ቀን———————————**

Annex VI: - Results of Survey in Abobo woreda, Southwest Ethiopia, 2019.

Name of kebeles	Identified by survey		PPS	
	Cases	**Controls**	**PPS for cases**	**PPS for controls**
Abaru	42	69	15	30
Wankak	35	57	13	25
Village8/9	27	44	10	19
Ukuna	26	42	10	19
village 11/12	16	27	6	12
village/17	14	23	5	10
Tegni	12	21	4	9
Chubokir	10	16	4	7
Village/13	10	15	4	7
village/7	9	14	3	6
village/14	8	13	3	6
Terkodi	7	11	3	5
Aberimeti	6	10	2	4
Dumbang	4	5	1	2
Pukedi	4	5	1	2
Powatalam	4	8	1	4
P/umha	4	8	1	4
Terchiru	4	7	1	3
Lumtak	3	5	1	2
Total	**245**	**400**	**88**	**176**

JIMMA UNIVERSITY
ጅማ ዩኒቨርሲቲ

ቁጥር
Ref. No ____
ቀን
Date ____

Institutional Review Board (IRB)
Institute of Health
Jimma University
Tel: +251471120945
E-mail: zeleke.mekonnen@ju.edu.et

To: Asmelash Abera

Subject: Ethical approval of research protocol

The IRB of institute of health has reviewed your research project entitled:

"Factors Associated with Home Delivery among Mothers in Abobo Woreda, Gambella, Southwest Ethiopa: Case Control Study"

This is to notify that this research protocol as presented to the IRB meets the ethical and scientific standards outlined in national and international guidelines. Hence, we are pleased to inform you that your protocol is ethically cleared.

We strongly recommended that any significant deviation from the methodological details indicated in the approved protocol must be communicated to the IRB before they are implemented.

With regards!

Zeleke Mekonnen (PhD)
Associate Professor, Health
Research and Postgraduate
Director

Institute of Health
Jimma University