

INSTITUTIONAL DELIVERY SERVICE USE AND ASSOCIATED FACTORS
AMONG MOTHERS IN LEMO DISTRICT OF HADIYA ZONE, SOUTHERN
ETHIOPIA



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JIMMA UNIVERSITY FACULTY OF PUBLIC HEALTH, DEPARTMENT OF HEALTH
ECONOMICS, MANAGEMENT AND POLICY

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ABSTRACT

BACKGROUND: Institutional delivery is a delivery that has taken place in the hospitals or health centers by skilled birth attendants. Although one of the key strategies in reducing maternal death is increasing institutional delivery service through skilled birth attendance; use of this service by pregnant mothers is significantly lower in Ethiopia as well in the study area.

OBJECTIVE: The aim of the study was to assess institutional delivery service use and associated factors among mothers who gave birth in the last 12 months prior to the study in lemo district, hadiya zone, southern Ethiopia.

METHODS: A community-based cross-sectional study was conducted from March 04 – 29, 2019 among mothers who gave birth in the last 12 months prior to the study. Stratified Cluster sampling was used to get 634 total sample sizes. A pre tested semi- structured questionnaire was used to collect quantitative data and semi-structured, open ended questionnaire for qualitative data collection tool. Data capturing was done using Epi-data version 3.1 Software. Then, for analysis exported to SPSS version 20 Bivariate analyses was carried out to identify factors that are associated with institutional delivery service use. Multivariate regression analysis was performed for those factors that showed a statistically significant association in the Bivariate analysis. Information obtained from participants through in-depth interview was analyzed using thematic analysis.

Results: Out of the 634 participants, 609 mothers participated in this study resulting in a response rate of 96.1%. About 259(42.5%) mothers used health institution for delivery services. Institutional delivery service use was affected by mother's level of education. Mothers who were able to read and write (AOR=8.3, 95%CI: 4.3-16.0), Urban residence AOR= 2.9, 95%CI: 1.3-6.4], good Knowledge towards delivery and pregnancy complications AOR=2.1 95%CI: 1.2-3.0),governmental workers (AOR=2.3, 95%CI: 1.2-4.4), wealth status of highest income mother (AOR= 3.5,95%CI: 2.0-5.9) &anti natal care visit AOR= 3.5,95%CI: 2.0-6.3).

Conclusion: Institutional delivery service use by mothers was low. Lack of formal education, lower ANC visit, poor knowledge towards institutional delivery services and lower socioeconomic status of the respondents were factors associated with lower use.

Key words: institutional delivery service use, mothers, associated factors and Lemo district

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ACRONYMS AND ABBREVIATIONS

CST	Cluster Sampling Techniques
EDHS	Ethiopian Demographic Health Survey
EFY	Ethiopian Fiscal Year
ETB	Ethiopian Birr
HDF	Home Delivery Free
HC	Health Center
HF	Health Facility
HH	House Holds
HP	Health Post
HPs	Health Professionals
ID	Institutional Delivery
IDS	institutional delivery service
LMIC	low and middle income countries
MMR	Maternal Mortality Rate
MWR	Maternal Waiting Room
SB	Skilled Birth Attendant
SMH	Safe Mother Hood
SNNPR	Southern Nation and Nationality People's Region
SSA	Sub Saharan Africa
TBA	Traditional Birth Attendants
WHO	World Health organization

1. Chapter one: Introduction

1.1 Background

Institutional delivery is a delivery taken place in hospitals or in health centers by skilled birth attendants (medical doctors, public health officers, midwives or Nurses)[1].

Globally, 287 000 mothers die from complications of pregnancy and childbirth. Sub-Saharan Africa and Southern Asia accounted for 85% of the global burden of maternal deaths [2].

Appropriate delivery care is crucial for both maternal and prenatal health and increasing skilled attendants at birth is a central goal of the safe motherhood (SMH) and child survival movement[3]. In low and middle income countries(LMIC), despite the great public health efforts, majority of women still deliver by the assistance of traditional birth attendants (TBA) or relatives at home[4]

Giving birth in a health facility is associated with lower maternal mortality; that is due to a greater certainty that the pregnant women will be able to access all the relevant services much easier than if she had received skilled assistance at home. An important component of efforts to reduce health risks to mothers is increasing the proportion of deliveries in the health facilities [5].

Major causes of maternal deaths is due to direct causes like hemorrhage, infections, obstructed labor, unsafe abortion and high blood pressure. The most feared complication that occurs usually after the mother has given birth is severe bleeding which occur when a mother give a birth at home without skilled birth attendants[6]

Among sub-Saharan African countries (SSA) about 510 maternal deaths per 100,000 live births which account sixty two (62%) of the world's total maternal death and adult lifetime risk of maternal mortality in women from sub-Saharan Africa was the highest at 1 in 38 [7]. Ethiopia is one of the SSA which accounts for 412 maternal deaths per 100 000 live births [8]. Maternal deaths in Ethiopia represent 21% of all deaths to women age 15–49 [9]. Data shows that skilled care before, during and after childbirth saves the lives of women and newborn babies [10]. However, a large number of deliveries in low- and middle- income countries (LMICs) occur at home. Most obstetric complications occur during the time of delivery and cannot be predicted, but can be prevented with proper medical care at health facility. Therefore, for the strategies of

health facility delivery to be effective, it is essential to understand the factors that influence individual and household factors to use health institutions for delivery [11].

1.2 Statement of the problem

Low and middle income countries account for 99% (286 000) of the total maternal deaths globally [12]. One cause for maternal deaths is the non-use of maternal health care services by a sizable proportion in a health facility. However, most of the maternal deaths are preventable if deliveries were overseen by skilled personnel in the health institution [13].

World Health Organization promotes skilled attendance at every birth to reduce maternal mortality. However, the coverage of skilled birth attendance at health institutions varies from country to country and from region to region. For instance, in Pakistan 25.7% [14], in Afghanistan (38%) [15], in Uttarakhand India 33% [16] and in Kenya (56.3%). In Ethiopia, 26% of deliveries took place at health institutions in 2016. This achievement is higher, as compared to 6% in 2005 and 10% in 2011. However, this remained low as compared to other LMICs: Kenya (56.3%) [17] and Tanzania (67.7%) [18].

The lower coverage of institutional delivery service use in the health facility may contribute to higher maternal deaths which could have been prevented and avoided. Delivery in health facilities is still challenging in LMICs in which a higher number of women attend antenatal clinics but about less than half of them deliver at home without assistance of skilled professionals. Inability to use health facilities for giving birth will predispose to maternal mortality and morbidity. So, proper interventions must be taken to increase delivery in health facilities. Institutional delivery is encouraged as a single most important strategy in preventing maternal morbidity and mortality. Despite this fact, institutional delivery is low in many LMICs including Ethiopia [19].

Use of institutional delivery service is affected by many factors including parity, distance, knowledge of delivery complications and attitude towards institutional delivery service use [20]. Many studies conducted previously showed that some of the possible factors contributing to using of institutional delivery in Ethiopia include that woman's education, economic status, ANC service, accessibility of health facilities and previous birth [21]. Both regional and zonal performance 25.5% and 32% respectively was under-achieved when compared with national

target plan of 67% for 2016/17. The reason why low proportion of facility birth has been stated mainly socio-demographic, knowledge and attitude related factors, obstetric factors and health service related factors[22, 23]..

Currently, isolated waiting rooms, locally called “enatochmakoya” were constructed for only pregnant women in each health facility with food items for delivering mother and her attendants to promote health facility delivery and Every month there is pregnant mothers forum which is led by delivery case team focal person in the health center to create awareness about institutional delivery service use. Having all this, mothers don't prefer health facility to give birth in the district except those mothers with obstetric complication after long delays which will expose them to death. Hadiya zone health department reported that lemo district is the last by institutional delivery and felt at red zone (as the country’s standard to classify performance level as green \geq 80%, yellow [70-80) %and red<70%) in performance rank (Hadiya zone health department Report 2017).

This low performance is despite Health sector transformation plan (HSTP) of Ethiopia aims to Reduce maternal mortality from 420/100,000 LB to 199/100,000 LB and increase deliveries attended by skilled health personnel to 90% by 2020. But these targets will never met unless institutional delivery services are properly utilized and factors that affect institutional delivery are clearly identified in order to take appropriate measures [24].

Therefore, this study was attempted to identify factors associated with institutional delivery service use by employing community based cross sectional study design in lemo woreda hadiya zone, southern Ethiopia.

1.3 Significance of the study

Institutional delivery service use among mothers who gave birth as seen in last three consecutive demographic and health surveys at national and regional level remained very low as compared to national plan. Even if, many interventions have been done to improve institutional delivery service, this might be due to many barriers like Obstetric factors, socio-Demographic, Health service related factors and Knowledge and attitude related factor.

Previously, Different study conducted at community level hence may not be generalized to the overall mothers who gave birth in the health institution due to different factors.

Therefore, this community based study method was important because it was identify the main reason why mother who gave birth one year prior the study period have not use institutional delivery services. Although; health posts, health centers and hospitals are widely expanded throughout the country, mothers are not still use health facility to give birth, due to different factors which were explained in this study.

Maternity Waiting room (MWR) as one factor for institutional delivery service use was little studied. As the best of the investigators awareness there were no study conducted in the study area about factors affecting institutional delivery.

This study will prove important directions for intervention which help local level health planners to critically look at the problem during their planning process. Furthermore, also be used by health care providers and implementers as an input towards supporting and promoting institutional delivery service use and as well can be used as an input for similar studies that are going to be conducted in the future.

CHAPTER TWO: LITERATURE REVIEW

2.1. Institutional delivery service use.

Delivery at health institutions are affected by a many factors, some of which are rooted in socio demographic, knowledge and attitude related factors, obstetrics factor and health service related factors. Previous studies done in Ethiopia showed that there were variation in health facility delivery use, 12.3% in Munisa district [6], 4.3% of rural mothers and 40% urban mother in Arsi and 78.8% in Bahirdar [25]4.1% in Tigray [26] and 12% in Southwestern Ethiopia[27] Several studies which were conducted in different part of the world indicate that the prevalence of institutional delivery service use were low across the world.

A community based cross sectional study in Nepal among 129 mothers reported that 78.3% of women use health facility to give birth [28]. The other study conducted. in Malawi, 73% institutional delivery use [29]. A community based study in Nigeria on use of institutional delivery was 53.1% [30].A community based cross sectional study conducted among 791 mothers in liban district,in guji zone, Oromia region, southern Ethiopia found institutional delivery was 13.9%[31]. Likewise, a community based cross sectional study design which is enhanced by qualitative study was employed in Goba woreda, Bale zone, Ethiopia, on 562 mothers, that reported 47% of mothers gave birth in health institution[32]. Meanwhile, a community based cross-sectional study was conducted among 428 mothers in benshangul gumuz regional state, in pawe district, 51.1% mothers reported that they have delivered in health institutions[33]. Similarly community based cross sectional study done in affambo district of affar region among 519 mothers 22.4% gave birth at health institution [34]. In the same way, a cross sectional study conducted in zone 3 of afar regional state, Ethiopia and data were collected quantitatively from 478 women who had given birth during the preceding one year of study 16.7% gave birth to at health institution[35].

Community based cross sectional study conducted on 424 mothers debre berhan district north shoa zone, amara region 80.2% gave birth at health institution [36]. A cross-sectional community-based quantitative and qualitative study design were used to review the determinants of institutional delivery in Liben Zone, Somali Region, eastern Ethiopia, among 385 mothers 30.4% of mothers gave birth at health institution[37].

Another community based cross sectional study was conducted in sidama zone south west Ethiopia in loka-abaya district south east Ethiopia from a total of 550 women 26.8% of women gave their birth at health facility [38]. Community based cross sectional study in kometa sub locality in mizan aman town shows that 66.5% uses health facility[39]. A community based cross-sectional study among 957 in rural districts of Wolaita and Dawro Zones, Southern Ethiopia, revealed that 38% births were taken place at health institution [40]. A community based cross sectional study in benchi maji zone southwest Ethiopia among 765 mothers who deliver 2 years preceding the study 78.30% deliver in health institution[41] . furthermore a cross-sectional study conducted on 844 women who gave birth in the previous five years in Sodo town; Southern Ethiopia among them 62.2% uses health facility[42] .

2.2. Factors influencing institutional delivery service use.

2.2.1. Demographic and economic factors.

Age: A cross sectional studies conducted in various parts of Ethiopia found that older women where as less likely to deliver in health institution than younger women. Cross sectional study conducted in Bench Maji Zone, Southwest Ethiopia among mothers 765 who deliver 2 years preceding the study found that mothers in the age groups of 25–34 and 35–44 were less likely to deliver in health institution respectively in comparison with those mothers in the age group of 15–24[43].

Wealth status: Community based cross-sectional study was conducted among 519 mothers in affambo district, afar, Ethiopia - 2016 mothers in the highest wealth status were five times more likely to deliver in the health institution compared to mothers in the lowest wealth status[34].

Marital status: Community based cross sectional study was conducted in Malawi among 1812 mothers who gave birth during past one year mothers who were married were 2 times more likely to give birth in health institution as compared to that of unmarried [29].

Occupation: Community based cross sectional study was conducted in beshangul gumuz among 428 Mothers whose husbands occupation was governmental employee were 5.2 times more likely to deliver in health facility than mothers whose husbands were farmer by occupation Mothers occupation other than housewives (merchant, employee and private business) were two

times more likely to use institutional delivery compared to housewives [33].

Education: Studies conducted in different parts across the world identified significant association of maternal education with institutional delivery service use. Women who attended secondary and above educational level were more likely to deliver in health facilities than women who did not attend formal education [44, 45].

Studies demonstrated that educational status of the husband determined choice of place of delivery of the Women. women whose husbands attended secondary and above educational level were better to use health facility for delivery service than those women whose husbands were uneducated ([46, 47].

A cross-sectional study in Bangladesh among 7313 mothers whose educational status were higher was two times more likely to deliver at health institution as compared to mothers whose educational status was primary [48]. Community based cross-sectional study conducted in boset woreda, Oromia regional state, central Ethiopia among 589 mothers demonstrated women whose educational status of primary and above had more than twice more likely to use health facility for delivery service than those who were illiterate [50]. A community-based cross sectional study conducted among mothers who gave birth in the preceding two years prior to study in banja district, Amara region among 394 mothers who attended secondary and above education were 7 times to give birth at health institutions than mothers who were unable to read and write[21]. Community based cross sectional study done in arbaminch town, gamo gofa zone, southern Ethiopia a total of 168 Women Not Educated were 73% less likely utilize the delivery service in the health facility than educated [51]

Residence of mothers: Community based cross-sectional study conducted among 371 mothers in Sekela District, west gojam, amahara region Ethiopia Mothers who lived in Urban Kebeles were five times more likely to deliver in health facilities than those who live in Rural areas[34]. The other cross sectional study which supplemented by qualitative study was employed in Goba woreda, Bale zone Ethiopia among 580 mothers, urban mothers were 3.6 times more likely to deliver at health institutions than rural mothers [32].

2.2.2 Knowledge and attitude related factor

Mothers Knowledge on delivery service(DS): Community-based cross sectional study conducted in Banja District, Awie Zone, Ethiopia among 394 Mothers who had enough knowledge on danger signs of labor were about three times more likely to deliver at health institutions than mothers who had no knowledge[44]. A community based cross sectional study conducted among mothers in Asosa district in Asosa zone shows women who had information on delivery service were 2.49 times more likely to utilize institutional delivery service than women who had no information on institutional delivery [52].

Attitude: Community based cross sectional study conducted among women of child bearing age in Assosa District, Assosa Zone, Northwest Ethiopia reported women who had favorable attitude towards institutional delivery service were 9.25 times more likely to use institutional delivery service as compared to women who had unfavorable attitude towards delivery service[52].

2.2.3 Obstetrics factors:

Parity (number of births): A community based cross-sectional study was conducted among 589 mothers in Boset woreda, Oromia region, Ethiopia who gave prim birth was two times more likely to give birth at health institution than those who gave more than two births [34].

ANC visit: studies conducted in different parts of Ethiopia reported that ANC use has been shown to be associated with institutional delivery service use for example A community based cross sectional study conducted in Bahir dar, Amahara region, among Mothers who had ANC visit during pregnancy were 4 times more likely to deliver in health facilities than those who did not ANC visit during last pregnancy [53]. Community based cross sectional study was conducted in Dejen woreda Gojam zone, Amara region among 361 mothers ANC visit during last pregnancy was 15 times more likely to deliver in health facilities than those who did not have ANC visit during last pregnancy [54].

Birth Plan: A community based cross-sectional study design was used in Chitwan district of Nepal shows mothers who were plan for their birth were 2 times more likely to give birth at health institution than mothers who were not plan for their birth[28].

2.2.4 Health service related factors

Distance :Community based cross sectional study was used among 178 in Arbaminch Town, Gamo Gofa Zone, southern Ethiopia Women who have been living in areas more than ten min far away distance from health facility were less likely to utilize health service as compared to women living less than ten minutes far away[51].

previous birth at health institution: Community- based cross sectional study conducted among 519 in affambo district,affar region, Mothers who satisfied on the services given at the health institution were 15 times more likely to deliver in the health institution as compared to mothers who were dissatisfied on the services given at the health institution[34].

Maternity waiting room: Maternity waiting rooms (MWRs) are temporary shelters for pregnant women located near a hospital or health center. It has been endorsed by WHO since 1996 as one component of a comprehensive package to reduce maternal morbidity and mortality. MWR provides skilled delivery and postnatal care, referrals in case of complications, counseling for maternal and newborn care including nutrition and early initiation of breastfeeding, family planning and social services including community awareness of existing maternal waiting rooms, income generation activities, gender awareness and support for domestic and gender-based violence. It also increases institutional deliveries and consequently decrease maternal mortality caused by the delay in reaching obstetric care[55]

2.2.5 Conceptual frame work

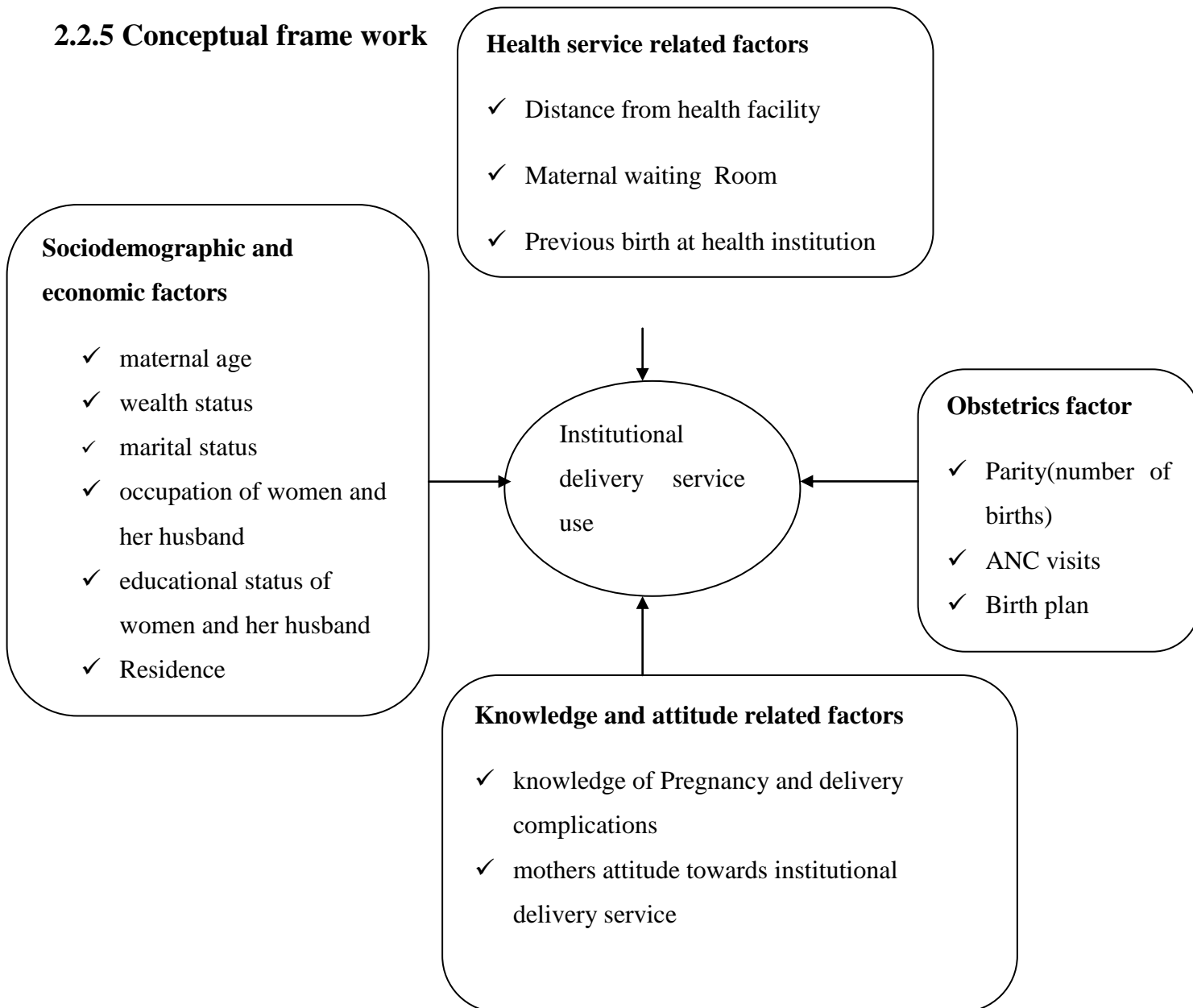


Fig.1 conceptual framework for Institutional delivery service use and associated factor

Source: Adapted from review of Literature [34, 56, 57] .

CHAPTER THREE

3.1 OBJECTIVE OF THE STUDY

3.1.2 General objective

To assess institutional delivery service use and associated factors among mothers who gave birth in the last 12 months prior to the study in Lemo district of Hadiya zone, Southern Ethiopia 2019

3.1.3 Specific objective

To determine institutional delivery service use among mothers who gave birth in the last 12 months prior to the study.

To identify factors affecting institutional delivery service use among mothers who gave birth in the last 12 months prior to the study.

CHAPTER FOUR METHODS

4.1 Study area and period.

This study was conducted in Lemmo District which is one of the ten Districts in Hadiya zone of Southern, Ethiopia. Which is located 232 KMs south north of Addis Ababa, the capital city of Ethiopia and 198 KMs from the regional capital of Hawassa. Lemmo District is bordered on the south by the KembataTembaro Zone, on the southwest by Duna and Soro, on the west by Gomibora, on the northwest by Misha, on the northeast by Ana Lemmo, and on the southeast by ShashogoDisrtict. The District is administratively structured in to 35 kebeles (32 Rural and 3 Urban). estimated total population of the District is 153,469 in 2018 from these 76,014 are males and 77,455 are females and an estimated 15,181 women are in reproductive(15-49) age groups and the total households of the District is 32,055. Mothers who gave birth in period of one year in Lemmo District were 5218. The health infrastructure in the District comprised 7 health centers, 35 health posts, 5 rural drug vendors and six private clinics. With regard to human resource, there are 177 all types of health professionals, 63 rural, 3 urban health extension workers and 59 supportive staffs in the district (Lemmo district Health office report, 2018). The study was conducted from March 04 –29, 2019.



Figure: 2 map of study area

4.2 Study design.

A community based cross-sectional study was used. The study was triangulated with qualitative study through in-depth interview.

4.3. Population.

4.3.1. Source population.

All Mothers who gave birth in the last 12 months in Lemmo District, hadiya zone, southern Ethiopia Prior to study period

4.3.2. Study population.

For quantitative: all Mothers who gave birth in the last 12 months prior to the study in the selected kebeles and who fulfilled inclusion criteria in the study

For qualitative: key informants and mothers who gave birth one year prior to the data collection day and who were not included in quantitative but from the same source population

4.3.3. Study unit

Individuals (identified Mothers)

4.4. Inclusion and exclusion criteria.

4.4.1. Inclusion criteria.

Mothers who gave birth 12 months prior to the day of the data collection period

4.4.2 Exclusion criteria

Mothers who were critically ill or with other disabilities that may hinder communication during the data collection time

4.5. Sample Size determination for quantitative study

4.5.1. Sample Size Determination for Quantitative Study

Sample size was calculated by using single population proportion formula by taking, 95% of confidence interval, 5% margin of error and prevalence of institutional delivery service use from prior study were taken. Applying the formula: $n = \left(\frac{(Z_{\alpha/2})^2 p(1-p)}{d^2} \right)$ Where, n=the minimum sample size $Z_{\alpha/2}$ = the desired level of confidence interval 95% (1.96) P= proportion of

institutional delivery service use $d =$ margin of error. By taking $p = 38\%, 51.1\%, 71.7\%, 48.3\%$ and 47% from similar study done in Wolaita and Dawro zones in southern Ethiopia[40], in Benishangul-Gumuz region in Goba woreda[33], in Dejen Woreda Ethiopia[54], in Woldia Amhara region Ethiopia[2], Bale zone North-West of Ethiopia[32] respectively. By all the above assumptions, the sample size (n) is 362, 384, 312, 383 and 382 respectively. Finally, sample size with the 51.1% which give maximum sample size of 384 and considering design effect 1.5 and 10% for non response rate, the final sample size (n) was $384 * 1.5 + (10\% * 384) = 634$.

4.6 Sample Size for qualitative method

Eight participants were selected purposely for in-depth interview: 2 TBAs, 2 midwifery profession, 2 Head of health facilities, 2 mothers who gave birth one year before the day of data collection.

4.6.1 Sampling Procedure and Sampling Technique for Quantitative Method

By using multistage sampling technique considering Kebeles as a cluster; First, all the Kebeles in the District were stratified into urban and rural. The district has 35 kebeles (32 rural and 3 urban). Next, to this, the sample size was assigned by using probability proportionally for each stratum based on their population size. Then, 1 out of 3 urban and 10 out of 32 rural Kebeles were selected by using simple random sampling technique from each stratum based on the recommendation of WHO guideline “Tools for Assessing the Operationality of District Health Systems”[58]. Since every family folder have monthly updated households information including vital events, their unique households identity number, family folder registration, and immunization registration book obtain in health post from health extension worker were used for identification of eligible households in selected Kebeles.

The sampling frame was formed based on their households identity number for each Kebeles. Finally, a mother who gave birth within one year period at every 3rd households by using formula of $k^{\text{th}} (\text{interval}) = N/n$ for each selected kebele based on N (total listed mothers) and selected by using a systematic random sampling technique to obtain 634 mothers from eligible households for the study. Lastly the 1st mother was selected by randomly or lottery method.

Sample size proportionally calculated for each kebeles as follows.

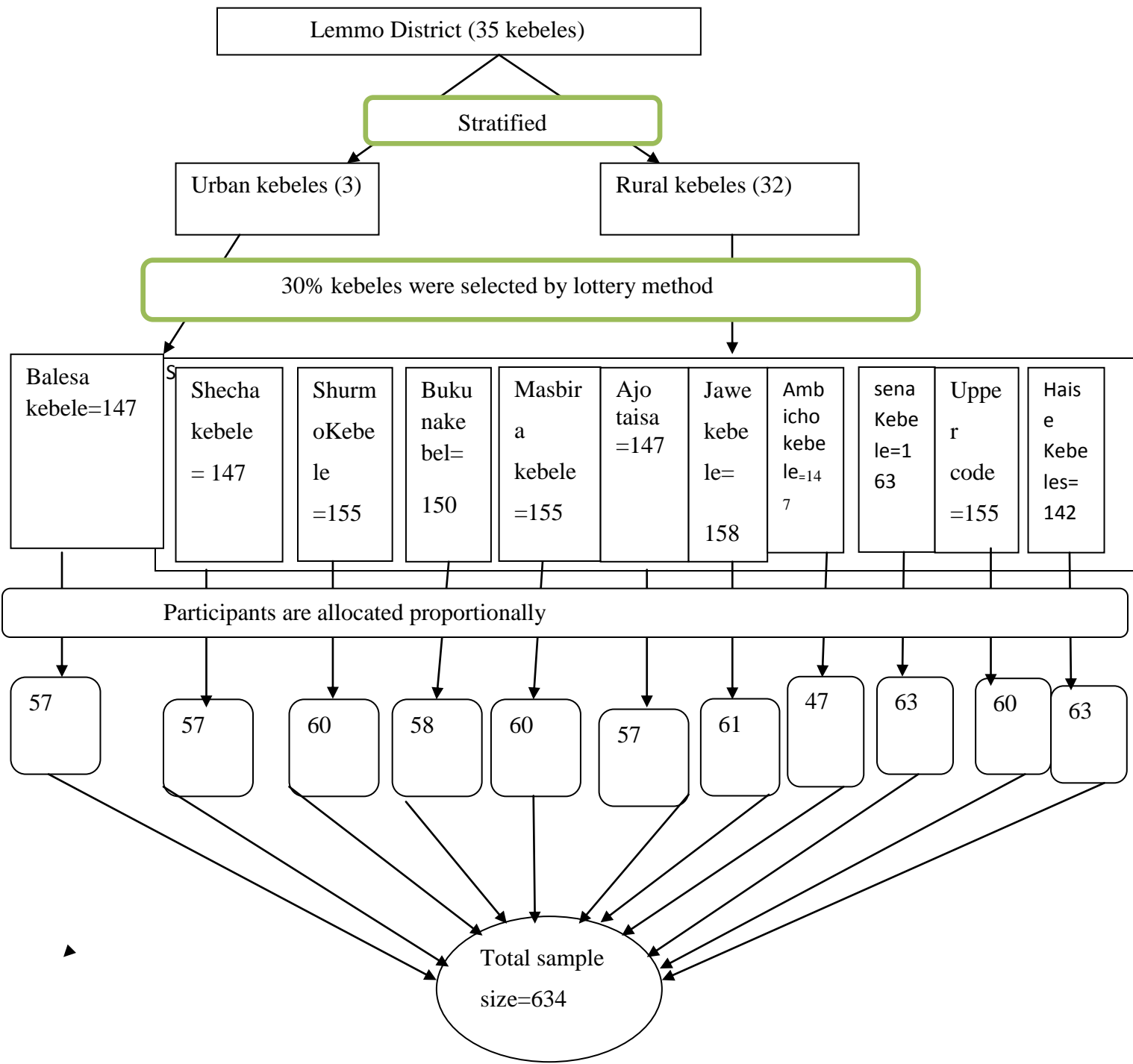


Fig 2: schematic presentation of sampling procedure for study on institutional delivery service use and associated factors

4.6.3. Sampling technique for qualitative study

Purposive sampling technique was employed to select the study subjects.

4.7. Data collection methods

4.7.1. Data collection Instrument for Quantitative Study

Data was collected using a pretested semi-structured questionnaire which was adapted from Ethiopian demographic health survey and Tools and indicators for maternal and newborn health [23]and [61] respectively. The questionnaire comprises sociodemographic factors, knowledge and attitude related items, obstetric related factors, and Health system related factors and institutional delivery service use. Questionnaire initially were prepared in English then translated into local language by experts fluent in both languages and back translated to English then by another local language expert translate to Hadiyingna to ensure consistency.

4.7.2 for Qualitative Study

In depth interview were prepared in English and not translated because of it was collected by the principal investigator.

4.7.3. Data collectors and Data collection procedure.

The data was collected by eleven diploma nurses who are fluent in the local language and were residing in the study area and three supervisors with qualification of health officer and Bsc nurses were recruited. Two day training on how to fill the questionnaire, making interviews was given to data collectors and supervisors with additional practical field work to ensure the quality of the field operation.

4.7.4 Data collection procedure

House number of mothers was selected by data collectors and supervisors assigned for kebeles. The data collection was conducted on the whole day. The selected participants were informed by data collectors as she was selected to participate in the study. If the selected participant interested, consent was obtained and the data were collected. All the mothers, interviewed, their last child born within one-year period in selected kebeles, interviewed in their home. On the first visit, data collectors interviewed study participants if the mothers were unavailable then revisiting was arranged at least three times during data collection. The intensive supervision was done by the principal investigator and supervisors, then, they were checked the data for

completeness, accuracy, and consistency throughout the data collection period. Also, overall supervision was done by principal investigators.

4.8. Study Variable

4.8.1. Dependent variable

Institutional delivery service use

4.8.2. Independent variables

Sociodemographic and economic factors: maternal age, wealth status, marital status, occupation of women and her husband, educational status of women and her husband and Residence

Knowledge and attitude related factors: knowledge on Delivery and Pregnancy complications and mothers attitude towards institutional delivery service

Obstetrics factor: Parity, ANC visits and birth plan

Health service related factors: Distance from health facility, maternal waiting room and previous birth at health institution

4.9. Operational definitions

1. Institutional delivery service use: Refers to using delivery services in health centers or hospitals. [34]

2. Institutional delivery: Refers to giving birth of a mother in a hospitals or health center.[63]

3. A skilled attendant Refer to people with midwifery skills (midwives, doctors and nurses) who have been trained for the skills necessary to manage normal deliveries and diagnose, manage or refer obstetric complications'. [62]

4. Knowledge: Knowledge about institutional delivery service use was measured by the participants' responses to seven knowledge related questions related to institutional delivery service use. Correct responses were given a value of "1" and incorrect responses were given "0." Then that scored 50% and above has good knowledge while those that scored less than 50% have poor knowledge. [34]

5. Mothers: woman who give birth in the period of one year

6. Household Wealth status:- Using EDHS questionnaire, house hold assets ownership of the following household resources: radio, television, electricity, bicycle, motorcycle, car, type of floor, type of wall material, type of roof material, toilet facilities, farm land, and of domestic animals such as cattle, sheep, goats, and mule were assessed and wealth index was computed by using principal component analysis. The wealth status was categorized in to three groups and ranked from lowest to highest tertile.[8]

7. Attitude; Factors related to intuitional delivery service use measured by six questions and summed score of related attitude items on 5 -point Likert's and as summed score 60% and above it considered as the influences of attitude on institutional delivery increased and as the scores below 60% the influences of attitude on institutional delivery service use decreased. [34]

4.10. Data quality control.

Data quality was assured before, during and after data collection process.

Before data collection:

Data collection tools was translated from English to Hadiyisa and back to English to assure consistency and pre-test was carried out 10% of total sample size in Soro district of Hadiya zone to make necessary adjustments after obtaining informed consent. The questionnaire was checked for its clarity, understandability, uniformity and completeness of the questions. Important amendments and logical flow of ideas was maintained based on the pre-test result. Additionally, training given for data collectors and supervisors Reliability of the data collection tools was checked by using Cronbach's alpha value at cut off point for composite variables. The result was found for knowledge 0.79 and for attitude 0.74.

During data collection: There was a close day to day supervision in the data collection process. Collected data was checked for completeness and consistency by the supervisors and principal investigator each day.

After data collection: The supervisors and the principal investigator together was rechecked the completeness and consistency before transferring it into computer software. Non over lapping numerical code was given for each question and the coded data entered into Epi data version 3.1 prepared templates then cleaning data during preparing of templates, during data enter and after

data entered.. Finally, data entry was done by two data clerks and consistency of the entered data was cross checked by comparing the two separately entered data.

4.11. Data processing and Analysis for quantitative Study

First, data was checked by principal investigator for its completeness and consistency. Each completed questionnaire was assigned a unique code and entered to Epi-data version 3.1 Software[54] Then data were exported to SPSS version 20[60] for analysis. The two composite variables (knowledge assessed parts and attitude measured parts) was computed and dichotomized based on measurements. The family wealth status were constructed using principal component analysis (PCA) method by considering locally available households assets and the family wealth status were into three tertile. It was used for socio-economic variables involved in measuring the wealth status of households. The assumptions of factor analysis/PCA were checked to conduct data reduction. Bartlett's Test of Sphericity was checked and it was taken as significant at $p < 0.05$ to conduct factor analysis. Sampling adequacy for factor analysis/PCA checked with Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the results in this measurement accepted at $p \text{ value} > 0.5$. Varimax rotation employed during factor extraction to minimize cross loading of items on many factors. At the end of the principal component analysis, the wealth index was computed as a continuous scale. The outcome variables institutional delivery service use was recorded to dichotomous outcome either they used or not used the health institution. Univariate analysis such as simple frequencies, proportions, and summary statistics were used to describe the study population in relation to relevant variable presented in tables and figures. Bivariate analysis and crude odd ratio with 95% confidence interval was carried out to identify variables that are significantly associated with outcome variables by using logistic regression. Multicollinearity test was done to check between independent variables were intercorrelated using Variance inflation factor (VIF) and value of > 10 was considered for diagnosing Multicollinearity whereas there were no variables correlated. The goodness-of-fit of the model was checked by Hosmer and Lemeshow significance value more than 0.05 were used to characterize a logistic regression model as best fit. Variables with $p\text{-value} < 0.25$ in Bivariate analysis were considered as candidates for multiple logistic regressions and they were entered into multivariate regression model to identify the important determinants by controlling possible confounding effects. Backward Logistic regression was used to identify a variable which has the

largest contribution to the model. Which was used P-value <0.05 to show statistical significance and odds ratio with 95% confidence interval to measure strength of association. Then multivariate logistic regression analyses were performed for those factors that showed a statistically significant association in bivariate analysis and investigate independent predictors by controlling for possible confounders. Finally, variables whose p value less than 0.05 ($p<0.05$) in logistic regression were considered as statistically significant association with institutional delivery service use.

4.12. Data processing and Analysis for qualitative Study

Data was filled/ take notes carefully, reading again and again then transcribed in English, coding and categorizing (similar) then was thematised based on objective. Finally, the findings were triangulated with the quantitative study.

4.13. Ethical Consideration

The study was approved by Jimma University, institutional review board (JUIRB). Permission was obtained from SNNPR health bureau, Hadiya zone health department and Lemmo District health office prior to the study. Written consent was obtained from the office and submitted to head of health center and local authorities .Participants were informed clearly about the purpose and benefit of the study and written informed consent were obtained from them. Participant who provided written consent was enrolled for the study and the confidentiality of responses were maintained throughout the research process by giving code for participant. They were informed well that they have full right to totally refuse to participate and/ or draw from the interview at any time of they have any problem.

4.14. Information dissemination.

The findings of this study will presented to Jimma University, to SNNPR Regional health bureau, Hadiya Zone Health Department, Lemmo District, respective hospitals and health centers, other organizations working on maternal and child health program in the SNNPR. The findings may also be presented in different seminars, meetings and workshops and will be published in local and international journal.

CHAPTER FIVE: RESULTS

Out of 634 respondents expected to participate in the study 609 respondents were interviewed making a response rate of 96.1%. The mean age of the respondents was 27.5 and $SD \pm 7.1$ years. Majority 296(48.6%) of the respondents were housewives and out of 544 respondents husbands 270(50%) were farmers and 205(33.7%) of them are in the middle wealth status. Regarding to their ethnicity and residents' majority 541(88.8%) of the respondents were Hadiya in ethnic and 555(91.1%) respondents were rural resident. Majority, 190(31.2%) of the respondents educational level was able to read and write, 544(89.3%) were married and 205(33.7%) were in the middle wealth status. Out of 544 married respondents 192(35%) respondents' husbands completed primary educational level (Table 1).

Table 1: Socio-demographic and economic characteristics among mothers who gave birth one year prior the study period in Lemmo Woreda Southern Ethiopia, March2019

Variables	Frequency	Percent (%)
Age in year		
<20	64	10.5
20-30	410	67.3
>30	135	22.2
Marital status of respondents		
Married	544	89.3
Divorced	34	5.6
Widowed	31	5.1
Educational status of respondents		
Unable to read and write	178	29.2
Read and write only	190	31.2
Primary education	150	24.6
Secondary and above	91	15
Educational status of husband		
Unable to read and write	99	18
Read and write only	109	20
Primary education	192	35
Secondary and above	144	27
Residence of respondents		
Rural	555	91.1

Urban	54	8.9
Ethnicity		
Hadya	541	88.8
Kambata	27	4.4
Gurage	18	3.0
Others*	23	3.8
Occupational status of respondents		
Housewife	496	81
Government employee	92	15
Others**	21	4
Wealth status of mothers		
Lowest	203	33.3
Middle	205	33.7
Highest	201	33
Occupational status Of husbands		
Farmer	440	81
Governmental employee	90	17
Others***	14	2

Others * Silte, Amhara, wolaita, Oromo, halaba **Private employee and merchants*** Private employee, merchants and farmers

5.2 Institutional delivery service use among study participants

Of the total 609 respondents, 259 (42.5%) gave birth at health facilities

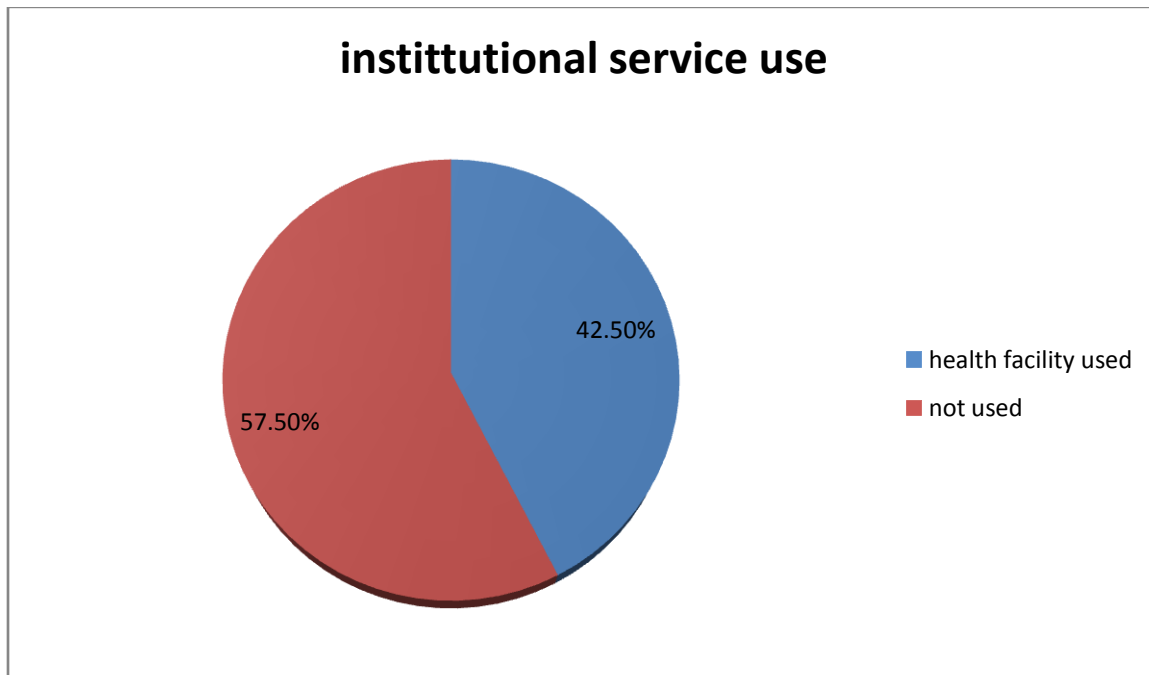


Figure 4: Institutional delivery service use of study participants in lemo district of hadiya zone southern Ethiopia March 2019

5.3 Knowledge of mothers towards institutional delivery service use

In this study the knowledge of respondents towards institutional delivery service use assessed with seven questions and the respondents who answer greater than or equal to 50% of the questions correctly was labelled as good knowledgeable towards institutional delivery service use and as poor knowledgeable for those who were score below 50%. Based on this findings, majority of respondents 320(52.5%) had good knowledge and 289(47.5%) have poor knowledge.

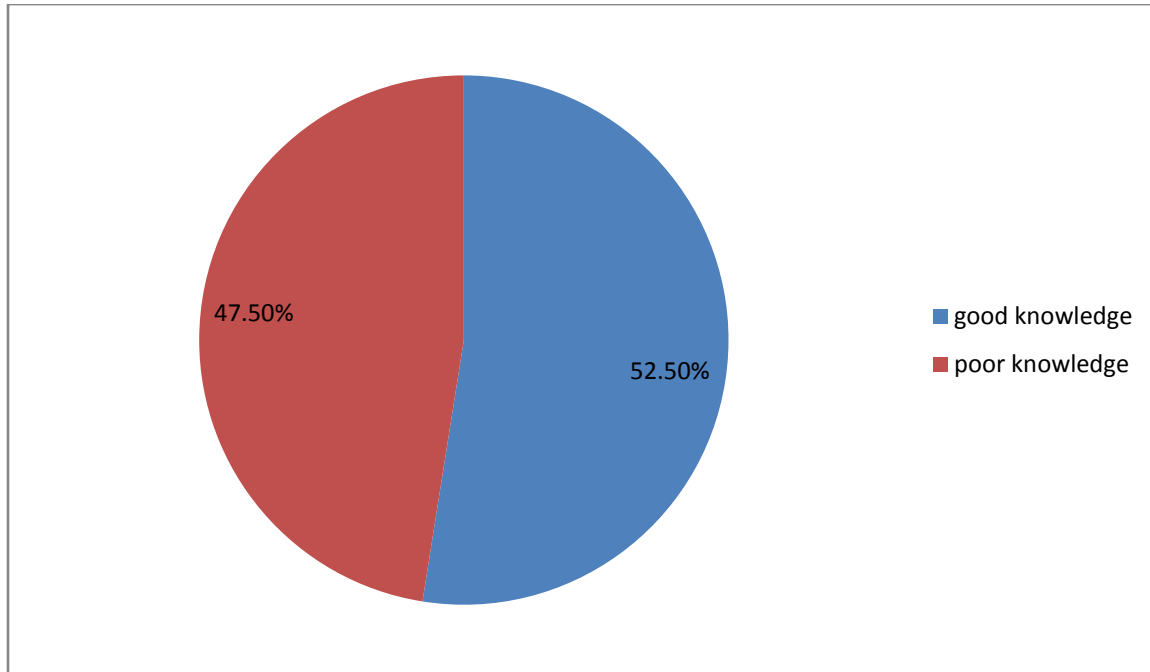


Figure 5 Knowledge of respondents towards institutional delivery service use among mothers who gave birth one year prior the study period in Lemmo district Southern Ethiopia 2019

5.4 Attitude of mothers towards institutional delivery service use

Factors related to institutional delivery service use measured by six questions and summed score of related attitude items on 5 -point Likert's and as summed score 60% and above it considered as the positive attitude towards institutional delivery service use and as the scores below 60% negative attitude towards institutional delivery service use. Based on this findings, majority of respondents 396 (65%) had positive attitude and 213(35%) had negative attitude towards institutional delivery service use.

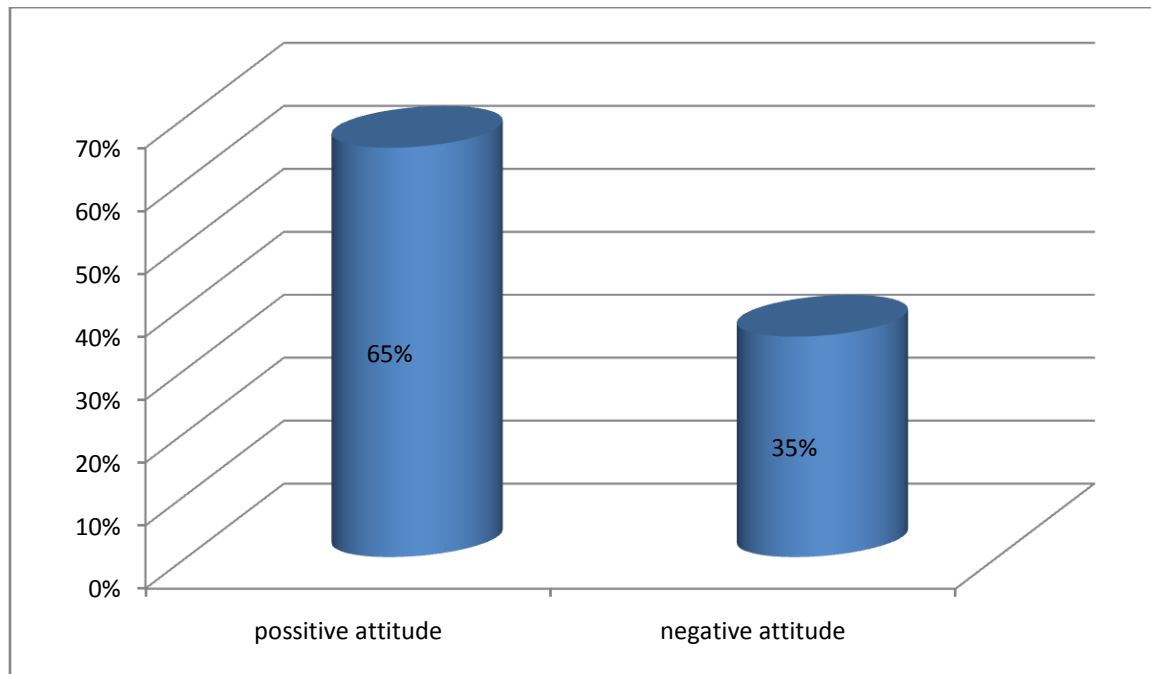


Figure 6 attitudes of respondents towards institutional delivery service use among mothers who gave birth one year prior the study period in Lemmo district Southern Ethiopia March 2019

5.5 Obstetric Fact

Majority of the respondents 393(64.5%) had visit health facility for ANC follow up for the last pregnancy. Regarding place of ANC follow up 319(81.2%) of the respondents visit on health center and more than half 349(57.3%) of the study participants were give greater than three live births. Less than half 256(42%) of the respondents gave previous birth (other than last delivery) in the health institution. With regard to Use of institutional delivery service Use of institutional delivery service 259(42.5%) mothers gave their last delivery at HF and 286(47%) of them attended by skilled birth attendants (Table 4).

Table 4: obstetric history of respondents in Lemmo district, Southern Ethiopia, March2019

Variables	frequency	Percent
ANC visit		
Yes	393	64.5
No	216	35.5
Number of ANC visit		
1-3	133	33.8
>_4	260	66.2
Use of institutional delivery service		
Yes	259	42.5
No	350	57.5
Birth attendants		
Health professional	286	47.0
Traditional birth attendants	162	26.6
Family	138	22.7
Others*	23	3.8

Number of births

1-3	260	42.7
>3	349	57.3

Place of Anc visit N=393

Health center	319	81.2
Hospital	32	8.1
Others **	42	10.7

Planned pregnancy for the last delivery

Yes	269	44.2
No	340	55.8

Others*=(relatives and friends),others**=(health posts and clinics)

5.6 Health service related factors

Majority of the respondents 378 (62.1%) travel/walk <30 minutes to reach health facility and more than half of the respondents 477(78.3%) have information about maternal waiting room. Among them, 193 (32%) of respondents used maternal waiting room. About 193(31.7%) of the respondents used ambulance for transportation to health facility and 256(42%) of mothers gave previous birth (other than last delivery) in the health institution.

Table 5: Health service related factors among mothers who gave birth one year prior the study period in Lemmo district Southern Ethiopia, March2019

Variables	Frequency	Percent
Travel time to reach health facility		
>_60 minutes	378	62.1
<60 minutes	231	37.9
Had information about maternal waiting room		
Yes	477	78.3
No	132	21.7
Use of maternal waiting room		
Yes	193	32
No	416	68
transport used		
Ambulance	193	75.0
Taxi	39	15.0
Foot	27	10.0
previous birth was in the health institution(before last		

delivery)

Yes	256	42
No	353	58

5.7 qualitative study results

A total of eight participants were selected purposely for in-depth interview: two mothers who gave birth one year prior date of data collection and who were not included in quantitative study but the same as source population, two TBAs, two HWs from midwifery profession, two head of health facility, were included. The interview had taken 60-90 minutes each.

Table 6 Thematic analysis of the qualitative result, lemo District, hadiya Zone, Southern Ethiopia, March 2019

Codes	Main Themes
Health centers are very far	Maternal health infrastructure
Few number of health centers	
Lack of attention to mothers in remote area	
Shortage of ambulance services	
Inadequate number of health professionals	
Lack of education by mothers about institutional delivery services	Health education and promotion
Low household income to pay for transport, food and medicines	Household socioeconomic status of mothers
Transport should be free for mothers	
Government should pay for medicines bought from private pharmacy	
Husbands are not voluntary to accompany mothers	Involvement of relevant stakeholders in the promotion of maternal health care services
No body to take care for children	
Traditional birth attendants are more friendly than health professionals	Mother-provider relationships
Delaying of care after arrival	
Lack of privacy during labor	Respect for mothers privacy and dignity
Insulting mothers in labor	

Hitting mothers in labor	
Denying relatives to enter	Birthing choices in health facilities
Preventing being on preferred position during labor	

5.8. Factors associated with institutional delivery service use

5.8.1. Results of bivariable analysis Age of respondents, educational status of respondents, marital status of respondents, Travel time of respondents from their home to health facility, residence of respondents, Knowledge towards delivery complications and pregnancy, educational status of respondents husband, occupation of respondents, anti natal care visit (ANC), number of ANC visit and wealth status of the respondents were associated with institutional delivery service use in bivariate analysis.

Table 7 bivariable logistic regression analysis on factor independently associated with institutional delivery service use among mothers who gave birth one year prior date of study period in Lemmo district, Southern Ethiopia, March 2019

Variables	Institutional delivery service use		P value
	Yes	No	
Age			
<20*	34(10.5)	30(4.9%)	
20-30	181(29.7%)	229(37.6%)	0.24
>30	44(7.2%)	91(14.9%)	0.014
Respondents			
Education			
Unable to read write*	20(3.3%)	158(25.9%)	
Read and write only	94(15.4%)	86(14.1%)	<0.001
Primary education	92(15.1%)	81(13.3%)	<0.001
Secondary and above	53(8.7%)	25(4.1%)	<0.001
Respondents husband			

education

Unable to read and write*	23(4.2%)	73(13.4%)	
Read and write only	54(10%)	67(12.3%)	0.23
Primary education	101(19%)	92(16.5%)	0.21
Secondary and above	56(10.3%)	78(14.3%)	0.24

Marital status of

Respondents

Married	240(39.4%)	304(49.9%)	0.24
Divorced	15(2.5%)	19(3.1%)	0.19
Widowed*	4(.7%)	27(4.4%)	

Travel time of respondents from their home to health facility

<60 minutes *	211(34.6%)	168(27.6%)	0.24
>60minutes	139(22.8%)	91(14.9%)	

Household assets (wealth index)

Lowest *	76(12.5%)	127(20.9%)	
Middle	65(10.7%)	140(23%)	0.24
Highest	118(19.4%)	83(13.6%)	<0.001

Residence

Rural *	227(37.3%)	328(53.9%)	
Urban	32(5.3%)	22(3.6%)	0.01

Knowledge towards delivery and pregnancy

Good	136(22.3%)	153(25.1%)	0.03
Poor*	123(20.2%)	197(32.3%)	
ANC visit			
Yes	179(29.4%)	214(35.1%)	0.04
No*	80(13.1%)	136(22.3%)	
Occupation			
Of mothers			
Housewife*	229(39%)	1.00	
Governmental	45(7.4%)	47(7.7%)	0.22
Employee			
Others	15(1.5%)	267(42%)	0.21
Number of ANC visit			
1-3*	42(10.7%)	41(10.4%)	
>_4	177(45%)	133(33.9%)	0.23

*Reference category, p- value < 0.25& candidate for multivariate analysis

5.8.2. Factors associated with institutional delivery service use

Age, educational status, marital status, Travel time of respondents from their home to health facility, residence, Knowledge towards delivery and pregnancy, educational status of respondents husband, anti natal care visit(ANC), occupation of mother, number of ANC visit and wealth status of the respondents were analyzed in multivariable regression, but only ANC visits to the health facility, Occupation of mother when employed, Urban residence of mothers, Higher wealth status of mother's household, good Knowledge towards delivery and pregnancy complications and able to read and write, primary educational status and secondary and above educational status were significantly associated with institutional delivery service use in multivariable logistic regression analysis.

Participants who were able to read and write were [AOR 95%=8.3, 95% CI 4.3-16.1], whose educational status of primary education were [AOR =8.1, 95% CI 4.2-15.6] and those who were secondary and above educational status were [AOR =14.1, 95% CI 6.7-33.0] times more likely to give birth at health institution as compared to those who were unable to read and write. This is evidenced by the qualitative finding in which a 28 year old educated mother said,

“...i gave last birth at health center. Health professionals assist me and they give me everything that is necessary during delivery in the health center. So I delivered a baby without any problem. ...”

This is also supported by the qualitative finding in which a 28 year old uneducated TBA mother said, *“...in my village mothers who are illiterate never knew health facilities. I assist them and they all had delivered at home with no problem. God was with them and with me to help. ...”*

Respondents whose residence in urban were [AOR 3.3, 95% CI 1.5-7.5] times as likely to give birth at health institution compared to their rural counterparts. This was supported by qualitative A 22 year old midwife at health center said, *“...I assist many mothers who gave birth in this health center and majority of the mothers were from nearby health centers and urban mothers but rural mothers do not use health center for their delivery services even if they follow ANC visit. When, i ask them during PNC why they didn't came health facility for their last delivery they told me that because labour is unpredictable and arises suddenly without warning and*

especially if it is in the night time; the women do not have much choice to give birth at health facility....”

Also it was supported by 28 year old TBA mother “*...those mothers who comes to me during their deliveries are; when labor comes especially at night and those who live in the rural area whose houses far from the health center...”*

Knowledge about complication of pregnancy and delivery was found to be predictor of institutional delivery. Participants who have good knowledge about institutional delivery were [AOR 2.1, 95% CI 1.2-3.0] times more likely to deliver in health institution compared to those participants who have poor knowledge towards institutional delivery. This was supported by qualitative study a 25 years old midwifery professional said;” *... I am here for about four years and working in this health center by my midwifery profession in the delivery ward, I saw that those mothers who know about complication of the delivery and pregnancy very well, then they use heath center for their delivery...’*

This is supported by head of health center “*...In this health center, health professionals give and educate mothers about pregnancy and delivery complications. Those mothers who follow and learn about delivery services then they use health center effectively for their delivery”*

occupation of mother was also associated by institutional delivery mothers who were governmental employee were [AOR =2.3, 95% CI 1.2-4.4] times more likely to give birth at health institution as compared to others and this is supported by the qualitative finding in which a 28 year old educated mother from urban area who delivered at health center said,

“... I am a government employee; I live near to health center. I follow all ANC services in the health center, then during my delivery I go to the health facility for delivery and I gave my baby without any problem.”

ANC visit during pregnancy was found to influence institutional delivery service use. Women who visit health facility for ANC were [AOR=3.5, 95% CI 2.0-6.3] times more likely to deliver at health institutions compared to their counterparts who do not visit health facility during pregnancy. This is also supported by the qualitative finding in which mother who delivered at health center said;

“...the nurse who examined me during ANC visit told me many things about the importance of delivering at health facility. Then, I and my husband, we decided that I have to deliver at the health facility. Two weeks before my delivery, I went to the health center to stay at the maternity waiting home; then I delivered my baby safely...”

As compared to lowest mothers in the wealth status, mothers with wealth status of highest were (AOR=3.5, 95% CI=2.0-5.9), more likely to deliver in the health institution. The qualitative finding supported this finding. A 26 year old head of health center said,

“...I have seen that mothers with highest wealth status have no problem with paying for any fee related with health facility delivery. They can pay for the transport or any related fee, so they can give their birth at health facility even they are living in rural far from health center ...”

This finding was also supported with the other key-informant said that; *“I have seen that many mothers in this kebele prefer to give birth at home rather than at health institution. Because Majority of the mothers who are in the lowest wealth status does not give attention for their institutional delivery and pregnancy related health care because they are busy for their livelihood”*

Table 8: Results of multivariable logistic regression analysis on factor independently associated with institutional delivery service use among mothers who gave birth one year prior date of study period in Lemmo district, Southern Ethiopia, March2019

Variable	Institutional delivery service use		Crude OR (95%CI)	Adjusted OR(95%CI)
	yes	No		
Respondents educational status				
Unable to read and write	20(3.3%)	158(25.9%)	1.00	
Read and write	94(15.4%)	86(14.1%)	8.6(4.9-14.9)	8.3(4.3-16.0)*
Only				
Primary education	92(15.1%)	81(13.3%)	8.9(5.1-15.5)	8.1(4.2-15.6)*
Secondary Education	53(8.7%)	25(4.1%)	16.7(8.6-32.5)	14.1(6.7-33.0)*
occupation of respondent				
Housewife	129(21.2%)	167(27.4%)	1.00	
Government employee	45(7.4%)	47 (7.7%)	1.3(0.8-2.2)	2.3(1.2-4.4)*
Others	85(14.0%)	136(22.3%)	1.2(0.8-1.7)	1.5(0.9-2.4)
Residence				
Rural	227(37.3%)	328(53.9%)	1.00	

Urban	32(5.3%)	22(3.6%)	2.9(1.6-5.3)	3.3(1.5-7.5)*
Knowledge towards delivery and pregnancy complications				
Good	136(22.3%)	153(25.1%)	1.4(1.0-1.9)	2.1(1.2-3.0) *
Poor	123(20.2%)	197(32.3%)	1.00	
Anc visit				
Yes	179(29.4%)	214(35.1%)	1.4(1.0-1.9)	3.5(2.0-6.3)*
No	80(13.1%)	136(22.3%)	1.00	
Household status (wealth index)				
Lowest	76(12.5%)	127(20.9%)	1.00	
Middle	65(10.7%)	140(23%)	1(.5-1.6)	1.2(0.7-2.1)
Highest	118(19.4%)	83(13.6%)	2.3(1.5-3.5)	3.5(2.0-5.9)*
Age				
<20	34(10.5)	30(4.9%)	1.00	
20-30	181(29.7%)	229(37.6%)	1.2(0.7-2.1)	
>30	44(7.2%)	91(14.9%)	0.6(0.4-1.0)	
Respondents husband education				
Unable to read and write	23(4.2%)	73(13.4%)	1.00	
Read and write only	54(10%)	67(12.3%)	0.5(0.3-0.9)	
Primary education	101(19%)	92(16.5%)	1.0(0.6-1.6)	

Secondary and above	56(10.3%)	78(14.3%)	0.8(0.5-1.2)
Marital status of Respondents			
Married	240(39.4%)	304(49.9%)	1.7(0.8-3.7)
Divorced	15(2.5%)	19(3.1%)	1.9(0.7-5.2)
Widowed	4(.7%)	27(4.4%)	1.00
Travel time of respondents from their home to health facility			
<30 minutes	211(34.6%)	168(27.6%)	1.2(.8-1.7)
>30 minutes	139(22.8%)	91(14.9%)	1.00
Number of ANC visit			
1-3	42(10.7%)	41(10.4%)	1.00
≥_4	177(37.7%)	133(28.3%)	1.8(0.9-2.7)

*=p- value <0.05, are significantly associated variables, Model fitness (Hosmer and Lemeshow) significance Test=0.712, classification power =78.3 nagelkerke R square=0.54

CHAPTER SIX: DISCUSSION

In this study, institutional delivery service use among mothers who gave birth one year prior to the date of study was 42.5%. This finding was lower than the findings of other previous studies conducted in Benishangul-Gumuz region in Guba woreda 51.1% [33], in Dejen Woreda Ethiopia 71.7% [54], in Woldia Amhara region Ethiopia 48.3% [2] and Bale zone North-West of Ethiopia 47% [32].

This difference might be due to the socio-economic and accessibility of the service difference. This finding was also consistent from community based study 38% in rural districts of Wolaita and Dawro Zones, Southern Ethiopia, [40]. On the other hand, it was higher than findings from in Liben district, Guji zone, Oromia region 13.9% [31], in Affambo district of Affar region 22.4% [34], in Liben Zone, Somali Region, eastern Ethiopia, 30.4% [37], in zone 3 of Afar regional state 16.7% [35], Sidama zone south west Ethiopia 26.8% [38]. This difference might be due to the difference in intervention that has been taking place by Health extension workers and women development army in mobilizing pregnant mothers for maternal health service use, time gap, Socio-demography difference, socio-cultural difference and Sample size.

Different studies confirmed that the probability of giving birth at health facilities could be affected by a number of factors including mother's demographic and socioeconomic characteristics, availability and quality of health services and residence of mothers [14].

In this study, mothers who are able to read and write were 8 times more likely to give birth at health institution as compared to mothers who were unable to read and write. This study agrees with study in Boset woreda, Oromia regional state, central Ethiopia [50] and study conducted in our country in Malawi [29]. This may be due to the fact that Education may increase female awareness and mothers to know what is right and beneficial to them. This may result in increased decision making power of the mothers. In this study also, Mothers who were educational level of secondary and above were fourteen times more likely to use institutional delivery service than mothers who cannot read and write. This finding is consistent with that of study conducted in Arsi zone, Oromia region, Ethiopia [59]. This is due to the fact that education may enhance female autonomy. Increasing mothers' ability to make decisions regarding their use of institutional delivery services. Education increases knowledge of delivery care, thus increasing the demand for use of institutional delivery service.

This study found that mother's residence was associated with institutional delivery service use. Mothers who live in urban were 3.3 times more likely to give birth as compared to their rural counterparts. This is in agreement with the study conducted in Guba woreda, Bale zone Ethiopia and Sekela District, west gojam, Ethiopia[32] and[21] respectively. The reason for these findings might be due the fact that in urban areas proportion of mothers with education is higher, accessibility of the services with minimal distance and transport, and mothers could have better decision making autonomy, good knowledge of pregnancy and delivery complications, better access to information than rural mothers, less affected by the negative consequences of cultural beliefs and norms that hinder mothers from accepting institutional delivery as normal and safe the effect of different media that urban mothers are exposed to.

Knowledge of the mothers about pregnancy and delivery complications were found significantly associated with delivery service use. Mothers who had good knowledge were about two times more likely to deliver in health institutions than mothers who had poor knowledge. This finding was similar to the study done in Banja District, Awie Zone, Ethiopia and in asosa district in asosa zone Ethiopia [44] and [52] respectively. The possible explanation probably, adequate information exchange from health extension workers, health professionals from prior delivery and high exposure for media.

In this study compared to lowest wealth status of mothers, mothers with wealth status of highest were 4 times more likely to give birth at health institution. This finding was consistent with the data from affambo district affar region and other country Nigeria [34] [30] respectively. This may be due to the fact that households in the highest wealth tertile have better material and financial assets that enable them to afford for institutional delivery services without difficulty and lowest tertile mothers are more likely to be illiterate, may be busy with other lively hood and do not care about ANC which in turn influence use of IDS.

This study also showed that mothers who visited ANC during last pregnancy were about four times more likely to deliver in health facilities than mothers who did not visit ANC. It is consistent with studies done in bahir dar, amahara region, Ethiopia [53], in Dejen woreda gojam zone, amara region, Ethiopia [54] and In Assosa District, Benshangul Gumuz Regional State, West Ethiopia [52]. This is probably due to the fact that health professionals give mothers more information on the availability of institutional delivery services and mothers can understand and comprehend the

information when they attend ANC visits during their pregnancy.

Finding also showed mothers who were governmental employee were two times more likely to use institutional delivery as compared to others (merchants, farmers and private business) because these women are in fact had better educational status than others (merchants, farmers and private business) in most of the cases and were influence about institutional delivery use. This finding was alike with other study in pawe district, benshangul gumuz, western Ethiopia [33].

In this current study, marital status, place of ANC, other socio economic characteristics like occupation of respondent's husband did not show significant association with institutional delivery service use, but in other similar study there were significant association with institutional delivery. This probably due to the fact that study participants in this current study were similar with respect to their socio-economic characteristics. There was also no association between mothers who gave birth last year prior the study period with previous birth and other factors like birth planned and number of live birth.

Limitation of the study; The cross-sectional nature of the study does not allow for causality assumption. Recall bias→ only recent information included Despite of these limitations, being a community based study, supported by qualitative study.

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATION

7.1. Conclusions

Low (42.5%) institutional delivery service use was observed in the study area. Factors such as ANC visits to the health facility, Occupation of mother when employed, Urban residence of mothers, Higher wealth status of mother's household, good Knowledge towards delivery and pregnancy complications and able to read and write, primary educational status and secondary and above educational status was predictor of institutional delivery services use.

7.2. Recommendations

To Health Extension Workers: - should strengthen the provision of ANC service to all pregnant mothers (and ensure that all mothers who started ANC follow up complete at least 4 visits before their delivery). This should be accomplished by teaching mothers on the availability and importance of institutional delivery services through home to home visits and by holding pregnant mothers' conferences every month at health posts.

To District and Zonal Micro Finance Agencies: Households' money saving culture should be enhanced in order to enable them to easily pay for the transportation associated with institutional delivery services without borrowing or sell of basic household assets. This should be accomplished through hiring of micro finance agents (like Omo agents) to each kebeles who teach and encourage households to open saving accounts and deposit money at the nearby branch offices.

To Federal MoH and Regional Health Bureau

Should ensure accessibility service in the community by building more health centers as close as possible to the communities within a walking distance.

To Future Researchers: - Future researchers are recommended to employ pure qualitative method in order to explore the full picture of the factors affecting institutional delivery services use and other study design.

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CHAPTER NINE: ANNEXES

Annex I; English version participant information sheet and informed voluntary consent form. Good morning/afternoon. My name is-----, I am working as data collector for the study being conducted in Lemmo District in eleven selected kebeles for Nigussie Abebe who is studying master's degree at Jimma University College of public Health and medical science. I kindly request you to lend me attention to explain you about the study and being selected as study participant.

Title of the study:

Assessing institutional delivery service use and associated factor among mothers who gave birth in one year period prior study period in Lemmo District, Hadiya zone, Southern; Ethiopia from march04-29 ,2019.

Purpose

The purpose of the study is to write thesis as a partial requirement for the fulfillment of master's degree in public health in health economics, management and policy for the principal investigator. Eventually, the study results on improvement of institutional delivery service use in Lemmo District, hadiya zone, southern Ethiopia.

Procedure and Duration

By having all mothers list that gave birth in one year's period from health extension worker and then interview them through structured questionnaire to provide me with pertinent data that is helpful for the study. The interview and the measurements will take about 20 minutes, so I kindly request you to spare me this time for the interview.

Risk and/or Discomfort and Benefits

By participating in this study you may feel that it has some discomfort but this may not be too much comparing its potential benefits it contributes to the overall health of couples through implementing appropriate utilization of in institutional delivery. There is no risk in participating

in this study and there would not be direct payment for participating in this study. If you participate in this study, the findings from this study may reveal important information for local as well as other health planners.

Confidentiality

The information that will collect during this study will be kept confidential. Information collected during the study will be stored in a file, which will not have individual name on it, but a code number assigned to it. Which number belongs to which name will be kept under lock and key, and it will not be revealed to anyone except the principal investigator. The finding of the study will be general for the study community and will not reflect anything for particular individuals.

Rights:

Participation for this study is on voluntary basis. You have the full right to permit or not for the study. You have also the full right to terminate at any time if you get something wrong with the study. You do not have to answer any question that you do not want to answer.

Persons to contact

If there is any question about study, you can contact any of the following addresses.

Principal investigator: nigussie abebe: mobile number:-0985306506

Email: nigussie1000@gmail.com

Institutional health research ethics review committee:

Tel:

P.O.Box 378, jimma

Declaration of informed voluntary consent: I have heard /read the participant information sheet. I have clearly understood the purpose of the research, procedures, the risks and benefits, issue of confidentiality, the right of the participating and contact address for any queries. I have been given opportunity to ask question for things that are unclear. I was informed that I have the right

to withdraw from the study at any time or not to answer any question that I do not want. Therefore, I declare my voluntary consent to participate in this study with my signature as indicated below.

Name and Signature of the participants _____

Name and Signature of data collectors _____

Annex II: English Version Questionnaire developed for institutional delivery service use and associated factor among mothers who gave birth in one year period in Lemmo District, Hadiya Zone, Southern; Ethiopia; 2019.

. Date of interview (date/month/year) _____

Name of the kebele _____

Code number of the questionnaire _____

Interview's name and signature _____ Signature _____

Supervisor's name and signature _____ Signature _____

9.1. Participants information sheet and informed voluntary consent form for guardians of mother's age less than 18 years.

My name is _____ I am working as a data collector for the study being conducted in this community by **Nigussie Abebe** who is studying for his master degree at Jimma University, the College of public Health and Medical Sciences. I kindly request you to give me your attention to explain you about the study and being selected as study participant.

1. Title of the study: institutional delivery service use and Associated Factors among mothers who gave birth one year prior the study period in lemo district, Haddiya, Zone, southern Ethiopia2019

2. Purpose of the study: The findings of this study will provide pertinent information regarding institutional delivery service use and Associated Factors among mothers and it will provide information about the problem to district health department. Moreover, the aim of this study is to write a thesis as a partial requirement for the fulfillment of a master's program in health service management for the principal investigator

3. Procedure and duration: I will interview your daughter using questions to provide me with pertinent data that is helpful for the study. There are about 62 questions to answer where I will fill the questions by interview your daughter. The interview will take about 30 minutes, so I kindly request you to permit and spare me this time for interview.

4. Risk and Benefit: The risk of being participating in this study is very minimal, but only taking few minutes from her time. There would not be any direct payment for participating in this study. But the findings from this research may reveal important information for the local health planners.

5. Confidentiality: The information that she will provided me will be confidential. There will be no information that will identify her in particular. The findings of the study will be general for the study community and will not reflect anything particular of individual person. The questions will be coded to exclude showing names. No reference will be made in oral or written report that could link participants to the study.

6. Right: Participation for the study is fully voluntary. They have the right to participate or not to participate in the study. If they decide to stop, they have the right to withdraw from the study at any time and this will not label them for any loss of the benefits which they otherwise are entitled. Mothers or Guardians have the right not to answer for any questions that they don't want to answer.

7. Contact address: If there are any questions or enquiries any time about the study or the procedure, please contact: Principal investigator:

nigussie abebe ,mobile phone:+2519853065.Email:nigussie1000@gmail.com

8. Declaration of informed Voluntary Consent

I have read or it was read for me the participant information sheet. I have clearly understood the purpose of the research, the procedures, the risks and benefits, issues of confidentiality, the rights of participating and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I will inform that my daughter that have the right to withdraw from the study at any time or not answer any question that they do not want. Therefore, I declare my voluntary consent on behalf of my daughter to participate in this study with my initial signature as indicated below.

Name and Signature of Guardian: _____ Date _____

Name and Signature of Data Collector: _____ Date _____

9.3 Hadiyisa gudukki xa'mmichii xamammanii ittanchi firmma'ii teime amoike sedenteyi hofene umure.

18 hofene umure ihako xinte woroni ago xa'mmichii xamammanii ittanchi firmma'ii (hadiyisa) Xummanne.Hinkidette? Ii summi _____yamammokko.An ka minaadabanne Ab. Nuguse abbaba baxoo saarayyina baa'yaat wixxachchi baxo baxoommulla; Ixxim jimma Yuunveersite'i Fayya'oom Kollejji lami digiree losaancho.

Ki'nnene Hof qax ammanina ka quuxxonne xa'mmoman ihukkoyya ka soroophph baxonne anga edim mashka'inne afoo hawwim ihukko siixxo'i hee'oyyo.

1. Hororri wocci:- ammo'I xum egech gas qoxone mahina qaramoydae ee'issammi mashikki ihhoo luwwi bikkinna sorrobimma

Hoffi qaxxi xammichchuwwa xamanitotto'o.kinse indommi dabachchi xale'i saraayyinnate awwadokkokki.

2. Hawwaja. Ka saraayyi baxone anga edim mashka'inne afo'I hawwi bee'e .woshshihuta.nimkinuwwigaqqiammanise 30 daqiqqa inine sawwite uwwituwwa higinobikkina hofakammi kimenna xananokko,

3. Awwado: .ka sarayyimine anga edimmine haramato isiti bikkina hawwajim ihukko siixxo'I hee'oyyo. Woshshi ihutan'nim kinse sindommi baya'ati ammo'I mahina xum egech xaaxitene qaramoydae laimina awadoko, kanikimine ammo'I fayaoamina makko'o duuha'a qocokko.

4. Saawitteedaaphaa'imma: kinise'esiidaamusaawituwwahundammi daaphannoommo. Siinduummi saawitti hundammiayyimeentichoommichaakissafissobee'annihukkissalaa'inssennahansoommo, odimkaatiuwwitidabachchahinkiammanimiihukkoatiuwwitisaessemexxa'aayimanchchimla'oob ee'Anne. Suummami, helakkamhegegemmikitambooyyo.

5. Matimaanichihanqqaa: kaasaaraayaaneeexoohundimmihasukkokkadoollennaxaanohanne. Saabeenamiihukkomaeeeyennaxanohanne.

Saaraayyaulliseenaqoodulasihinkkaa'Iammanemmiixxigaagaahoreenaaxaanokko aayimanichchimihiniikkaa'Iamanneemixaamichhee'ullassihaadaarraakaanniwooronni

6. Yookki eddanissanooawaaxee'e

Nuguse abbaba: Mobellixigo'o +251985 30 65 06).

7. Emaaillebeyyo: nigussie1000@gmail.com

8. Ittanichmo'isha.

Hundeemieeyyixxiqoosimmimaramato:saaraayyibaxamaa'nilaa'ishshikitabbo'Ihundimmiqanann a'amakko. Animmikaasaaraayikkaawaadooerisaqoosammo,awadohawwajjahundammela'a'amm oodimmihundemiluwwachakisanooangaa'anneamaxammo. Laa'ummibee'Iluwwa hundammela'a'ommisaammahundammesidamoo. Hasummiamannennesaaraayyauurrafiroomissa mikurakkoko. Kaahundaammegaaqqiifuurimmaa'innechaakissommo.

Dabachchawwa'nbaa'yaa'xisuumma: __ fuurimma _____ baala _____

Xamichaaxaama'n summa: _____ fuurimma _____ baala _____

Part I Socio demographic factors

Sr. No	Questions	Choice Answers	
101	Age	1.<20 2. 20-30 3.>30	
102	Marital status	1. Married 2. Divorced 3. Widowed	
103	What is your ethnicity?	1.Hadiya 2.Kambeta 3. Gurage 4. Other	
104	Where do you live?	1. Rural 2. urban	
105	What is your occupation?	1. House wife 2. Gov't Employee 3. others	
106	Educational Status of the mother	1. unable to read and write 2. Read and write only 3.primary education 4. secondary education and above	
107	Husbands educational Status	1. unable to read and write 2. Read & write only 3. Primary education 4. Secondary and above	
108	Husbands occupation	1. Farmer 2. Gov't employee 3. others	

Part II Obstetric factors

201	How many births have you ever had (parity)?	1.1-3 2.>3	
202	Did you have any visit to health facility during your last pregnancy?	1. Yes 2. No	
203	What were your reasons to visit health facility during your last pregnancy?	1. For ANC care 2. For delivery 3. For pregnancy related problem 4. For problems not related to pregnancy	
204	If your visit was for ANC, number of visits	1. 1-3 2. >=4	
205	Where did you attend ANC follow up?	1. Health Center 2. Hospital 3.others	
206		1. Yes 2. No	
207	Was your last pregnancy planned?	Yes No	

Part III. Questions related to the Last delivery

301	Have you ever given birth in health institution before the last delivery?	1.Yes 2.No	
-----	---	---------------	--

302	Where did you deliver your last birth?	<ol style="list-style-type: none"> 1. Home 2. Health facility 	Skip to Qn 305
303	If Home, why did you prefer to deliver in home?	<ol style="list-style-type: none"> 1. I feel more comfortable giving birth in home 2. Close attention from my relatives and families 3. Because it is my usual practice 4. others 	
304	Who assisted you during your last delivery at home?	<ol style="list-style-type: none"> 1. Health Professionals (skilled attendant) 2. TBAs 3. Family or relatives 4. others 	
305	If your answer to 303 is health facility, why did you choose to deliver in Health facility?	<ol style="list-style-type: none"> 1. To get better services in health facilities 2. To get better outcomes from health facilities to me and my baby 3. Bad experience from past home delivery 4. I was informed to deliver in health facilities 5. The health facility closer to my home 6. Others, specify----- - 	
306	If you gave birth in health facilities, which health facility?	<ol style="list-style-type: none"> 1. Health center 2. Hospital 3. Private clinic 	

Part IV Questions related to knowledge on pregnancy and delivery complications

401	Do you know some health problems that can occur during labour and delivery that could dangers the life of a woman and child?	1. Yes 2. No	
402	Do you know about the key danger signs during labour and delivery?	1.yes 2.no	
403	Do you know about common health complications that occur on mothers during childbirth	1.yes 2.no	
404	Do you have any information about	1. Yes 2. No	

	where to deliver?		
405	Do you know about benefits of institutional delivery for mother?	1.yes 2.no	
406	Do you know about benefit of institutional delivery for newborn?	1. Yes 2. no	
407	During ANC follow up did you get any information about pregnancy & delivery Complications?	1.yes 2.no	

Part V. Question related Attitude on delivery service use

Attitude on delivery service utilization						
		Strongly disagree	Disagree	Neutral	agree	Strongly agree
501	Being attended by male health professional during delivery is very shameful and	1	2	3	4	5

	unethical.					
502	Do you believe that, even if a woman doesn't have a health problem, labor and delivery should be conducted by skilled birth-attendant during child birth?	1	2	3	4	5
503	Do you think that giving birth at health facility is the safest for baby and mother?	1	2	3	4	5
504	Does health worker have good well coming when labour mother go there?	1	2	3	4	5

505	Placenta must be disposed secretly which it is not possible in HF delivery.	1	2	3	4	5
506	Any pregnant women are susceptible to face delivery complication.	1	2	3	4	5

PART VII Questions related to health services

601	How long would it take to reach health facility?	<30minutes >_30 minutes
602	What type of transportation would you use to get health facility?	1. Ambulance 2. Taxi/bus rent 3. On foot
603	Did you have information about Maternal waiting room for institutional delivery?	1 .Yes 2.No
604	Is it Available Maternal waiting room for institutional delivery	1 .Yes 2.No
605	If yes Q604, are you used Maternal	1. Yes 2. No

	waiting room?	
--	---------------	--

Part VI: House hold property (assets)			
	Asset type	Response	
Domestic animals			
	Cattle(ox, cow ,calf)	1.Yes	2.No
	Sheep	1.Yes	2.No
	Goat	1.Yes	2.No
	Chicken	1.Yes	2.No
	Horse/Mule/Donkey	1.Yes	2.No
Durable assets			
	Radio	1.Yes	2.No
	Watch/clock	1.Yes	2.No
	Mobile phone	1.Yes	2.No
	Motor bicycle	1.Yes	2.No
	Bicycle	1.Yes	2.No
	Table	1.Yes	2.No
	Chair	1.Yes	2.No
	Bed	1.Yes	2.No
	Own living house	1.Yes	2.No
	Own agricultural land	1.Yes	2.No
	Bee hive	1.Yes	2.No
House characteristics			
	Water source	1.Pipe 2.Non pipe	
	Type of floor	1.Cement/Wood 2.Earth	

	Type of wall	1.Cement 2.Mud
	Type of roof	1.Concrete 2.Iron sheet
	Toilet facility	1.Ventilated improved 2.Traditional pit

Thank you

Annex III: Hadiyyissina guddukki xa'ammicha xammamanninna

Minni ammo'i Qaroo ammane xumm gas xaxittene awwaxamodae awwaxameena horoo luww mah ihudae laimina haramona gudaakkoo xa'mmichacha

Xummanne, hinkidette? Ii summi-----yamamokko.an ka xa'mmicha xammooman ihummuyya Abbachch **nigussie ababa** yakkam jimm yuniverestt'enne xumm quxxuw gassone la'm digire'ee losano guullimmina gollo'i soroobi baxoo hosoothane.

Luxxekka ku xa'mmichch ka soroobanne hasisoo sawwite uwwiminee anga edena eeyyite uwwoo maninne mahina qaroo amo'i fayya'oo is xaaxxittenne qarimma hassissukkuyyi ixuwwi minnene qaramalda'ee la'immina issamoo sooroobi xammichcha.

Ki'nnene hof qax ammanina ka quxxonne xa'mmoman ihukkoyya ka soroophph baxonne anga edim mashka'inne afoo hawwim ihukko siixxo'i hee'oyyo. Ki'nnena makkubeelas xa'mmeena

gaassatem ihukko xa'mmumuyyim anga edim sabimma xantakkamo.Ka'isa issitakko'i bikkina afoo hawwi mahim bee'e. Wosh ihona bagaan ki'n uwwittakkam sawwit lobakkat amo'i ixuwwi minnenne qarukkuyya lehoo bee'isinaa fayya'oo is xaaxxitim hawwo tirimminne amo'o lehii baraarona hara'mmoo bikkina kee'mmal awwaado uwwokko. Ka xa'mmichchuwwa xa'mmona hoffi qaxi ammane uwwittakkamonihe Ooyya yakkolas asheere Sabakko'i las galaxxita annanihe Ammane uwwiminaa anga edimmi eeyyite firma'a

Soroobanch ka soroophphi kitabina hasisoo luwwa hundam kurakko. Ee'isam odim ka sorrobanne anga edimmi sabimmaa hasum sa'attanne uulisimma xanoomisa kuraakko.Anga edimminne sixxo'i bee'isaa odim ku soroob iinnene maham afisoo hawwi bee'isa kurakko. Ka bikkinam ka sorobanne anga edeena hasummosa firam'inne caakisoommo.

Su'umaa firmaa xa'ammamanichi_____Balla_____kabalee_____

Xammichichi kooda_____

Su'umma firmaa xa'ammanichi-----Balla

Annex V: Hadiyyisi Titaxxi xa'ammichicha

Baxxanchi matto: Hchi qanqii duhaaa.			
Xig	Xa'iamichichi Haggaree	Dabachicha	Higgehe
101	Ki'ii ummurri kabba'a ma'eeoo hincho'onnehe	_____Hincho'onne	
202	Atii minnee issai'eettehine?	1. Mu'ullatte 2.Miinnamo'o 3. Minii amma littokko'oo 4.Annanninika'ammo 5.Mulkki (matti xa'alle)_____	
103	Ayyi manicho'oo?	1.Hadiyyicho 2.Kambeticho 5. Mulkki (matti xa'alle)_____	

104	Ki'ii baxxi maha'aa?	1. Abbulancho 2. Dadarranicho 3. Addi baxanicho 4. Ma'alleyye baxanicho 5. Gaqqi baxanicho 6. Mulkki (matti xa'alle) _____	
105	He'llo bee'iyyi hanno?	1. uxxi ulla'aa 2. Gandissa	
106	Ki abaros xig mee'o?	Xigine..	
107	At me baxanch afatohane?	Maham losumbeeane Kitabima sorobima xanoman 1-8 baxanch affebe losamohane 9 hanan losamohan	
108	Ki manch me baxanch affakohan	Maham losubeeane Sorobima kitabima xanohan 1-8 affebe losakohan 9 hanan losakohan	
Baxxanich la'amo . qrim quuxine ammaxamaako xa'mmicha			
201	Luxeka hongit ammane ki ummur meeo	Hinchine kitabe	
202	Xumm gas xaxite wata laqohon	1. Oyya'aa 2. La'ommoyyo	
203	Higu ammane ma mashkaine xum gas mine waatitok	1. Hongumoka moameena 2. qareena 3. hongim mashkainete 4. hongim mashkaineyo 5. Muleka yolas...	
204	Waatitok hongim mashkainat ihulas meek kore waatate	Quxurine dise	
205	Hannone awwontitok	1. Xeena xabne 2. Xena kelane 3. hospitalane	
206	Mine qarimine afo hw bikina laqoo luw yohon	1. Oyya'aa 2. Oyya'ayyo	

		3.La'ommoyyo	
207	Oyya yitlas mah bikina macesito	1.shu'm orachine xiig firim bikina 2.keemalia horoor damunsim bikina 3.gurat edim bikina 4.cilich mikmikima hogim bikina	
		5.xuuch qeeralim bikina 6.am oro gtim bikina 7.mulkam	
208	Hano qarim hasisodae laqohon	1.Oyya'aa 2.La'ommoyyo	
209	Lasaancho qatitok hasahinimiye	1.Oyya'aa 2.hasateyo	
Baxxanich saso: higu ammane hano qatidae sarayo xa'micha			
301	Higu ammanaani annanane xum gasane qata laqohon	1.Oyya'aa 2.Oyya'ayyo	
302	Hanone qatitok higu ammane	1.minnene 2.xeena xaabane	
303	Minene yitolas mahina mine qatito	1.minene makobikina 2.i abarosine ihomare mishiso bikina 3.minene ihubikina ka ilaqaekam qarumok 4.xeena xaaba iitombeebikina 5. xeena xaab affisu haw yoo bikina 6. xeena xabane qasisoso keen qishixoobebikina 7. bir bee bikina 8 xuuch amadubikina 9. qee'l ihbikina 10.i manchi matite yu bikina 11.min man matite yu bikina	

		12 mulekim yoolas kure...	
304	Lasanchika qatit amane ay haramuko	1.ayim 2.xuuma egeran 3.las gat qasisan 4.mham qasisa laobeeken 5.xeena exteensioncho 6.qarman 7.mulkenim yolas kure....	
306	Xa'mich 303 xeena xaaba yitlas mahin do'lito xena xaaba?	1.danam awdo siideena 2. ciilichkaa igaqeka xuma hasumbikina 3.illagen mine qarumuy hawodamum bikina 4.losano uwako bikina 5.xeena xaab gadan ihubikina 6.mulekim yolas kure..	
307	Xeena xabane qaaitilas hinka beyonete	1.hospitalanen 2.xeena xabanenn 3.mul baxam keenanonete	
Baxanichi sorro:qarimine mat ihako luwa laimbikina xamo xamicha.			
4 0 1	Awwono awaduw xuum xaxitene uwamohaneniye	hoongkam amane uwakam awaad 1.Oyya'aa 2.Oyya'ayyo qasisim awad 1.Oyya'aa 2.Oyya'ayyo qaraaka lasage uwakam awwad 1.Oyya'aa 2.Oyya'ayyo qarakam amane afo haw horim bax 1.Oyya'aa 2.Oyya'ayyo Qaramu ciilicho abooyim awaad 1.Oyya'aa 2.Oyya'ayyo	

4 0 2	At maha saito qarim bikina	<p>Gasaka laim bikina</p> <p>1.Oyya’aa 2.Oyya’ayyo</p> <p>Haw afon gasaka laim bikina</p> <p>1.Oyya’aa 2.Oyya’ayyo</p> <p>Danam ihako xuma egerim bikina</p> <p>1.Oyya’aa 2.Oyya’ayyo</p> <p>Amoi xuum bikina</p> <p>1.Oyya’aa 2.Oyya’ayyo</p> <p>Ciluw xum bikina</p> <p>1.Oyya’aa 2.Oyya’ayyo</p>	
4 0 3	Hoongakam ammane afo haw mah maha?	<p>1.shum orachine firo xiiga</p> <p>1.Oyya’aa 2.Oyya’ayyo</p> <p>2. keemal damuma</p> <p>1.Oyya’aa 2.Oyya’ayyo</p> <p>3. godab gamima</p> <p>1.Oyya’aa 2.Oyya’ayyo</p> <p>4.gurat edema</p> <p>1.Oyya’aa 2.Oyya’ayyo</p> <p>5. ciilich mikmikat beeima</p> <p>1.Oyya’aa 2.Oyya’ayyo</p>	
4 0 4	Aye qarim amane hawone ubokok	<p>ayi amam esem eda</p> <p>1.Oyya’aa 2.Oyya’ayyo</p> <p>Luxeka qatamot xale</p> <p>1.Oyya’aa 2.Oyya’ayyo</p> <p>Kalucho qatote(5) hanan qattote</p> <p>1.Oyya’aa 2.Oyya’ayyo</p> <p>Lobakata qato ama</p> <p>1.Oyya’aa 2.Oyya’ayyo</p> <p>Mul fayaoom haw yoo ama</p> <p>1.Oyya’aa 2.Oyya’ayyo</p>	

4 0 5	Qarim amane afoo kemal haw mah maha	Uulo bee xiiga 1.Oyya'aa 2.Oyya'ayyo Am godabo gattima(30 daqqiinsee loboka) 1.Oyya'aa 2.Oyya'ayyo Qeeral xuuch(12 saat loboka) 1.Oyya'aa 2.Oyya'ayyo Gaga laima hogima 1.Oyya'aa 2.Oyya'ayyo	
Baxanichi onto'o :qarim beyo murim xanato			
5 0 1	Goon qassisim danamo	1.horiyeme itamomo 2.itamomo 3.laumoyo 4.itamomoyo 5.horiyem itamomoyo	
5 0 2	Mine qarim danamoyo	1.horiyeme itamomo 2.itamomo 3.laumoyo 4.itamomoyo 5.horiyem itamomoyo	
5 0 3	Xum gas xaxitene qarim danamo	1.horiyeme itamomo 2.itamomo 3.laumoyo 4.itamomoyo 5.horiyem itamomoyo	
5 0 4	Adil baxo baxoken danamisa gegesamohoniye	1.horiyeme itamomo 2.itamomo 3.laumoyo 4.itamomoyo 5.horiyem itamomoyo	

5 0 5	Onti matina atoratakam atoorach danamon	1.horiyeme itamomo 2.itamomo 3.laumoyo 4.itamomoyo 5.horiyem itamomoyo	
5 0 6	Ayy amam qatuya haw affooko	1.horiyeme itamomo 2.itamomo 3.laumoyo 4.itamomoyo 5.horiyem itamomoyo	

Baxanich loho xumm wvadine ammaxamako xamicha

601	Hinkan amane maso xuum xaaxite affebe?	<30daqiq >_30 daqiqa
602	Hinkido dabaransacho awaxitok?	1. Ambulanca 2. kaame 3.lokko
603	Ammo'I ushexo min bikina laqo ?	1 .oyya 2.oyyayo
604	Ammo'I min yoohon	1 .oyya 2.oyyayo
605	Yooko yitlas Q604, awwaxita laqoo?	1 .oyya 2.oyyayo

Baxanich loho : Minni ammaxxa'aa.

	Ammaxxi hagarra'aa	Dabacha	
Minni dinatte			
	Larri (mirrigo'I,baqulli,aduwwa)	1.Oyya'aa	2.Oyya'ayyo

	Gerebbii	1.Oyya'aa	2.Oyya'ayyo
	Fellii	1.Oyya'aa	2.Oyya'ayyo
	Antebii	1.Oyya'aa	2.Oyya'ayyo
	Fershii/boquchii/hallich	1.Oyya'aa	2.Oyya'ayyo
Minni muxxa'aa			
	Redo'ii	1.Oyya'aa	2.Oyya'ayyo
	Sa'atti	1.Oyya'aa	2.Oyya'ayyo
	Moballii	1.Oyya'a	2.Oyya'ayyo
	Kard	1.Oyya'aa	2.Oyya'ayyo
	Affuch barchummi	1.Oyya'aa	2.Oyya'ayyo
	Hurbaxxi barchummi	1.Oyya'aa	2.Oyya'ayyo
	Arre'ii	1.Oyya'aa	2.Oyya'ayyo
	Gaqqi minni	1.Oyya'aa	2.Oyya'ayyo
	Gaqqi ulli	1.Oyya'aa	2.Oyya'ayyo
	Dishii	1.Oyya'aa	2.Oyya'ayyo
Minni baxanchaa			
	Wa'ii aggi	1.Bobanne 2. Bobannaniyyo	
	Gaxxi maha	1.Cimintoo 2.Buchicha 3. Mulkki (matti xa'alle)	
	Immani maha	1.Kinna 2.Buchicha 3. Mulkki (matti xa'alle)-----	
	Goritte maha	1.Harra 2.Lisho'oo 3. Mulkki (matti xa'alle)____	
	Shummi minni maha	1.Dolli laba 2.Gassanne 3. Mulkki (matti xa'alle)____	

Gallaxxommo kii ammanni bikkina

Informed Consent Form for in-depth interview

Greeting! "Good morning/ good afternoon

MY name is.....I am from (Jimma University)

PURPOSE OF THE STUDY

The findings of this study can be paramount importance for the lemo district to plan intervention programs to tackle institutional delivery in the district which enables to increase institutional delivery service use, to improve maternal health and to share its contribution in reducing a national maternal mortality. Moreover, the aim of this study is to write a thesis as a partial requirement for the fulfillment of a Master's program in health service management for the principal investigator.

Risks and benefits of the study; By participating in this study and answering questions, you will not receive any direct benefit. However, your participation in this study would help us by increasing our understanding about the needs of women in the community in terms of problems related with institutional deliveries. We hope that the result of the study will improve the quality delivery service in the health facilities as the concerns and needs of women. Your participation in the study doesn't involve any risk to you.

Rights: you are completely free in this study or to refuse to do so. Even after you agree to participate in the study you will be free to leave the discussion any time you wish and/or to refuse to participate on any topic that you are uncomfortable with. The decision to not participate or to withdraw will not affect any future aspects of your life and any medical you should require or any other benefits to which you wouldn't be entitled

Part I: General Information

1. Position (responsibility)_____

2. Work experience in the area_____

Part II: Socio demographic information

1. Age: _____

2. Sex: _____

3. Educational status and qualification _____

Key informant in-depth interview guide on institutional delivery services use.

Name of the kebele / health center/ hospital): _____

Position of respondent: _____

Guide Questions *HWs and Head of H/C*

1. What do you think is the reason that many mothers do not use health facility while they gave birth?
2. What do you think is the reason that many mothers who gave birth do not prefer to use health facility for giving birth?
3. Can you please tell me the major barriers that affect institutional delivery service use in your area?
 - a. Acceptance of services by users
 - b. Related to providers
 - c. Equipment and supplies
4. What should be done to reduce or avoid barriers to institutional delivery service use in your locality
5. What measures should be taken to scale up the institutional delivery service use?
6. Any values of outreach programs focused on institutional delivery service use? To maximize institutional delivery service use? What do you recommend?
7. In your opinion, what are the factors that affect pregnant women's institutional delivery service use to gave birth at the health facility

In-Depth Interview (IDI) for mothers and TBAs will cover topics including:

1. Do you know about the risk of giving birth at home?
2. Why most of the time pregnant women not preferred to give birth at health institution?
3. Do you believe that health facility delivery is better than home delivery? How?
4. In your opinion, what are major factors that affect institutional delivery service use to give birth?
5. How to reduce or avoid barriers to institutional delivery service use in your locality

