



**COLLEGE OF HEALTH SCIENCE
DEPARTMENT OF PUBLIC HEALTH**

**ASSESSMENT OF BIRTH PREPAREDNESS AND COMPLICATION
READINESS AMONG WOMEN IN LASTA-LALIBELA DISTRICT,
NORTH WOLLO ZONE, AMHARA REGION, ETHIOPIA, 2019**

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Assessment of Birth Preparedness and Complication Readiness among Women in Lasta-lalibela District, North Wollo Zone, Amhara Region, Ethiopia, 2019

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TABLE OF CONTENTS

ACKNOWLEDGEMENT.....	I
TABLE OF CONTENTS.....	II
LIST OF TABLES.....	III
LIST OF FIGURES.....	V
ACRONYMS OR ABBREVIATIONS.....	VI
ABSTRACT.....	1
1. INTRODUCTION.....	2
1.1 Background.....	2
1.2 Statement of the problem.....	3
1.3 Significance of the study.....	5
2. LITRATURE REVIEW.....	6
2.1 Defining birth preparedness and complication readiness.....	6
2.2 Roles of BPCR towards improving birth assisted by skilled attendants by reducing delays.....	6
2.3 Knowledge about obstetric danger signs.....	6
2.4 Practices on birth preparedness and complication readiness.....	7
2.5 Factors associated with BPCR practices.....	8
3. OBJECTIVES.....	10
3.1 General Objective.....	10
3.2 Specific Objectives.....	10
4. METHODS AND MATERIALS.....	11
4.1 Study area and Period.....	11
4.2 Study design.....	11
4.3 Source population.....	11
4.4 Study population.....	11
4.5 Inclusion and Exclusion criteria.....	11
4.5.1 Inclusion Criteria.....	11
4.5.2 Exclusion criteria.....	11
4.6 Sample size determination.....	12
4.6.1: For the first objective.....	12
4.6.2: For the second objective.....	12

4.7 Sampling techniques.....	13
4.8 Data collection tools and procedures.....	14
4.9 Study variables.....	15
4.9.1 Dependent variables.....	15
4.9.2 Independent variables.....	15
4.10 Operational and term definitions.....	15
4.11 Data quality control.....	16
4.12 Data Processing and Analysis.....	16
4.13 Ethical Consideration.....	17
5. RESULTS.....	18
5.1. Socio-demographic characteristics of the respondents.....	18
5.2. Obstetric history of the respondents.....	20
5.3. Maternal health service utilization.....	21
5.4. Knowledge on key danger signs of pregnancy, childbirth, and postpartum.....	22
5.5. Knowledge of respondents about BPCR and their sources of information.....	23
5.6. Practices of respondents regarding preparation for birth and its complication.....	24
5.7. Association of socio-demographic characteristics with BPCR.....	25
5.8. Association of obstetrics characteristics and ANC practices with BPCR.....	27
5.9. Factors Associated with BPCR Practice.....	29
6. DISCUSSION.....	32
7. STRENGTH AND LIMITATION OF THE STUDY.....	36
8. CONCLUSION AND RECOMMENDATIONS.....	36
8.1 CONCLUSION.....	36
8.2 RECOMMENDATIONS.....	36
REFERENCES.....	38
ANNEXES.....	44
Annex-I: Information sheet and consent form.....	44
Annex-II: English version Questionnaire.....	46
Annex-III: Amharic version questionnaire.....	57
Annex IV: FGDs checklist guide and debriefing form for FGDs.....	72

LIST OF TABLES

Table 1: Double population proportion based on sample size determination for a study on birth preparedness and complication readiness among women who gave birth in the last 12 months in Lasta Lalibela district, North Wollo zone, Amhara regional state, Ethiopia, from february 1-28, 2019EC.	20
Table 2: Socio-demographic characteristics of the respondents in Lasta-Lalibela District, 2019 (n = 581).	26
Table 3: Obstetrics characteristics of the women in Lasta-Lalibela District, 2019 (n = 581).	28
Table 4: Antenatal care services among women in Lasta-Lalibela District, 2019 (n = 581).	29
Table 5: Proportion of women who reported types of key danger signs during pregnancy, childbirth, and postpartum period in Lasta-Lalibela District, 2019 (n = 581).	30
Table 6: Knowledge on BPCR among women in Lasta-Lalibela district, 2019 (n = 581).	31
Table 7: Proportion of women who heard about BPCR and their source of information in Lasta-Lalibela District, 2019 (n = 581).	31
Table 8: Birth preparedness and complication readiness among women in Lasta-Lalibela District, 2019 (n = 581).	33
Table 9: Association between socio-demographic characteristics of the women and their preparedness to birth and readiness to complication in Lasta-Lalibela District, 2019 (n = 581).	33
Table 10: Association between obstetrics characteristics and ANC practices of the women and their preparedness to birth and readiness to complications in Lasta-Lalibela District, 2019 (n = 581).	35
Table 11: Logistic regression model output for factors associated with BPCR practices among women in Lasta-Lalibela District, 2019 (n = 581).	38

LIST OF FIGURES

Figure 1: thematic representation of factors associated with birth preparedness and complication readiness.....	17
Figure 2: sampling method for quantitative study.....	21

ACRONYMS OR ABBREVIATIONS

ANC:	Antenatal care
AOR:	Adjusted odd ratio
BPCR:	Birth preparedness and complication readiness
CSA:	Central Statistic Agency
DBU:	Debre Berhan University
DHS:	Demographic and health survey
EMDHS:	Ethiopian mini demographic and health survey
FGD:	Focus Group Discussion
FMOH:	Federal Ministry of Health
HEW:	Health Extension workers
HSDP IV:	Health sector Development Plan IV
JHPIEGO:	Johns Hopkins Program for International Education in Gynecology and Obstetrics
MDG:	Millennium Developmental Goals
MDSR:	Maternal Death Surveillance and Response
MMR:	Maternal Mortality Ratio
SDG:	Sustainable Developmental Goals
SPSS:	Statistical Package for Social Science
UNPFA:	United Nation Population Fund Agency
UNICEF:	United Nation Children Fund
WHO:	World Health Organization

ABSTRACT

Background: Avoidable maternal mortality remains a huge burden in sub-Saharan Africa. Expectant mothers are faced with life-threatening complications which a Birth Preparedness and Complication Readiness plan helps to actively avoid. Birth preparedness and complication readiness are pivotal strategies pertaining to promote the timely use of skilled maternal and neonatal care, especially during childbirth.

Objective: The aim of this study was to assess Birth preparedness and complication readiness among women who gave birth in the last 12 months prior to the study period in Lasta-Lalibela district.

Methods: A community based mixed methods involving both quantitative and qualitative surveys were conducted in February 2019. Multistage sampling technique was employed for quantitative study whereas non-probability purposive sampling method was used for qualitative study. Study participants were interviewed using pretested structured questionnaires for the quantitative study while focus group discussions for the qualitative study. The collected data were entered and cleaned using Epi-data 3.1 and transferred to SPSS version 20 for analysis. Associations between variables were tested using the Chi-square test. Logistic regression was computed to observe the effect of independent variables on outcome variables. Statistical significance was set at $p < 0.05$.

Results: Majority (80.2%) of the respondents attended at least one Antenatal care visit in their last pregnancy while 34.4% attended 4 or more visits. About 80.2% respondents gave birth at health facility in last delivery and 48.5% of the women accessed transportation service. Wherein, 43.5%, 34.3% and 5.6% of the women were knowledgeable on danger signs of pregnancy, labor, and postpartum period respectively. Accordingly, 45.8% of the women were prepared for birth while 80.0% and 62.8% were arranged for facility birth and identified transportation mode respectively. Significant predictors for being well-prepared include; history of antenatal care in previous pregnancy (AOR = 4.48, 95% CI = 2.68, 7.40), attending multiple antenatal care visits (AOR=6.06, 95% CI=2.99, 12.24), being pregnant for the first time/ primigravida (AOR =2.1, 95% CI: 1.26, 3.52), birth at health facility in last delivery(AOR = 4.65, 95% CI = 2.56, 8.44), being aged below 21 during the first pregnancy(AOR = 2.41, 95% CI = 1.11, 5.26), being knowledgeable on danger signs of pregnancy(AOR = 2.96, 95% CI = 1.04, 8.47) and history of past obstetric complications(AOR = 4.66, 95% CI = 2.05, 10.59). FGD participants identified that poor infrastructure facility or limited transportation access as the most important barrier for birth preparedness and complication readiness practices in the area.

Conclusions: Birth preparedness and complication readiness practice in the study area was found to be minimal. However, prominent information gaps were observed on key danger signs of obstetric complications and BPCR. Therefore, much works need to be done on the areas to increase awareness and access to important health information to promote maternal care.

1. INTRODUCTION

1.1 Background

Maternal death represents any pregnancy related death of woman, other than accidental or incidental causes, occurred at any stage of pregnancy period. This is notably attributed to direct effect or/and aggravating complications of pregnancy and its poor management [1]. Maternal deaths due to pregnancy and related complications are among the major cause of deaths in developing regions of the world [2].

Multitudes of direct and indirect factors separately and/or in orchestrate entailing to cause maternal death. The primary cause of maternal deaths are including hemorrhage, hypertension and infections while interaction between pre-existing medical conditions and pregnancy representing the most notable indirect causes in this line [3]. Despite both causes of death are medical in nature, they predominantly derived by social and economic factors [4].

In 1985, WHO held the 1st international meeting on maternal mortality and in 1987 the safe motherhood conference was held in Kenya to launch safe motherhood initiative. In association with this, in 1994, Thaddeus & Maine have introduced birth preparedness and complication readiness as pivotal strategies pertaining to promote the timely use of skilled maternal and neonatal care, especially during childbirth. Subsequently, WHO recommend it as an essential element of ANC package. It could be provided to pregnant women during Antenatal care visit and through community health workers at home. This recommendation was published within the 2015 WHO guideline “WHO Recommendations on Health Promotion Interventions for Maternal and Newborn Health” [5, 6].

Birth preparedness and complication readiness (BPCR) are pivotal strategies pertaining to promote the timely use of skilled maternal and neonatal care, especially during childbirth. Importantly, early preparation prior to childbirth and being ready for complications would potentially reduce delays in obtaining this care [6]. Thus, determining important conditions, including place of delivery, nearest health care services in case of emergency, skilled attendants, a compatible blood donor in case of heamorrhage, support for care of the home and children during birth and emergency, key danger signs, planning for funds for birth-related and

emergency expenses, and arranging transport and having adequate supplies for clean delivery and post-partum are underscoring elements to mitigate maternal death [7].

1.2 Statement of the problem

Maternal death remains a major public health and societal challenges in Ethiopia as the country is one of the top eleven countries of high maternal mortalities [8]. According to WHO recent report a total of 353 mother's death per 100,000 live births which is adjusted as 11,000 maternal deaths has been owned by the country [2].

Besides to the existing shortcomings of the country, including limitations in the provisions of basic health care and shortage of skilled personnel, factors such as unaware of pregnant women on danger signs of pregnancy and poor trends of birth preparedness and complication readiness plan further exacerbated avoidable maternal death.

Now a day, it is evident that all pregnant mothers are at high risk of unpredictable and abrupt onset of obstetric emergencies or complications that could put the life of pregnant mothers and their newborn in danger. The fatal nature of these problems within a short period of time, which ranges from minutes to weeks, supplementary worsens the trouble. In addition, in the absence of advance preparation for birth and its complications mothers would usually spent their time while dealing with issues pertaining to money, transportation, companions and many others obstacles one's labour is suddenly happen. Thus in orchestrate will influence the outcome negatively [6,7].

Notably, report revealed that 72% of births in Ethiopia delivered at home while the remaining 28% percent are delivered at a health facility [9]. Additionally, study findings from different parts of Ethiopia, BPCR status ranges from 20% to 30% [9, 10, 11-15]. These could best explain low level of birth preparedness and complication readiness in the country and a pressing demand to figure out all the possible factors.

Increasing the proportion of babies that are delivered in health facilities, including delivery assisted by skilled providers is the primary task to be done to reduce health risks in mothers and children. Small scale studies in the country showed divergent figures, ranging less than 10 percent in Affar region to 82 percent in Addis Ababa. The three delays, specifically; delay in decision to seek care, delay in reaching care, and delay in receiving adequate health care are found to be important factors contributing to the low level of skilled birth attendance in the

country [4, 16]. Most importantly, lack of planning for use of a skilled birth attendant for routine births, and inadequate preparation for action in the event of complications are attributed to delays in receiving skilled care [7]. On the other hand, preparations of pregnant women for birth and complications pertain to reduce such delays.

Meanwhile, reduction of maternal mortality is one of the priorities as well as a welcomed extension of sustainable development goals of Ethiopia [17]. The government set several strategies intended to achieve this goal. One key strategy in this line is birth preparedness and complication readiness (BPCR), pertaining to promote the timely use of skilled maternal and neonatal care, especially during childbirth as preparing for childbirth and being ready for complications reduces delays in obtaining this care. It entails making plans prior to birth to ensure that a pregnant woman is prepared for normal birth and complications. It can positively influence knowledge and intermediate health outcomes, such as household practices and use of some health services [6, 18].

Hence, large and small scale study aimed at determining the magnitude of BPCR of woman across various communities in the country is underscored to fulfill the current gaps. In line with this, few studies have been conducted thus far in Ethiopia and most of them are quantitative studies suggesting a pressing need of additional study in unexplored areas by using a mixed type of approach.

Based on available information thus far, study conducted on BPCR of woman is deficient in Lasta-Lalibela district. Therefore, the present study is intended to assess BPCR, and its determinants among women who gave birth within the last 12 months prior to the survey in Lasta-Lalibela districts, North Wollo zone, Amhara regional state, Ethiopia.

1.3 Significance of the study

The determination of the magnitude of the BPCR, evaluating women's knowledge regarding BPCR and understanding its major determinants are primary step to be carried out prior to implement effective intervention measures. This project is; therefore, expected to provide substantial information regarding the magnitude and women's level of knowledge regarding BPCR as well as its major determinants in the study area. This in return have valuable contributions for the program planners, policy makers, the academic community, service providers, health care professionals and above all women suffering from pregnancy related complications and new born children as it pertains to improve health seeking behaviors and lower morbidity and mortality due to such debilitating and preventable conditions. The information from this study will also help to identify gaps in the provision of Antenatal care which is expected to encompass BPCR promotion as a part of its main components.

2. LITRATURE REVIEW

2.1 Defining birth preparedness and complication readiness

Birth Preparedness and Complication Readiness (BPCR) is an approach which plays a fundamental role to improve both utilization of skilled care at birth and timely use of services for pregnancy and newborn related emergencies. It is taken on by WHO as a vital component of antenatal care (ANC) services [19]. Furthermore, efforts in enhancing maternal and neonatal health programs should involve BPCR as a core means of reducing delays in receiving apposite and judicious care [2, 6].

2.2 Roles of BPCR towards improving birth assisted by skilled attendants by reducing delays

Acceptable use of maternity care services at the right settings and from accredited personals among individuals can be enhanced through promoting BPCR components such as raising knowledge of danger signs recognition and encouraging skilled care throughout her lifetime of pregnancy. Besides, facilitating significant others involvement towards arranging for transportation is also a focal area. Thus all could ultimately prevent delays in decision making and reaching care. BPCR also reduces delays in receiving quality care once they arrived at health facilities. It calls on providers and facilities to be prepared to attend births and ready to treat complications [6].

2.3 Knowledge about obstetric danger signs

Danger signs are an alarming symptoms that the woman or significant others can recognize easily. They signify the woman needs urgent care. A single most proven way of problem recognition at the individual level is knowledge of danger signs of an obstetric complication [6].

A community based cross sectional survey in Nepal demonstrated that knowledge on at least two danger sign during pregnancy, child birth and post-partum is found to be 34.8%, 59.0% and 39.7% respectively [20].

Despite absence of education on BPCR during ANC follow up, knowledge of danger signs among the pregnant women was high (Abnormal presentation 90.2%, umbilical cord prolapse 85.8%, swollen feet and face 86.3%, preterm baby 85.1%, heamorrhage 93.5%, loosing liquor 90.4%) [21].

The study conducted in Nigeria identified that only 50% of the participants knew at least one obstetric danger sign. At least four danger signs during pregnancy were reported by around half of the respondents while almost equal proportion of women during childbirth/labor (23.6%) and immediate postpartum (21.7%) [22].

Evidence from a cross sectional study to assess knowledge, attitude and practice of obstetric danger signs during pregnancy among mothers in Debre Birhan city administration shows that most (68.2%) of the study participants were found to have poor knowledge. Exposure to media contributes for nearly 3 times improvement in women's knowledge than those none exposed. Above and beyond, formal education was positively associated with women's attitude. Out of 51(8.1%) who experienced obstetric danger signs 44(7.0%) had good practice [23]. A study result from Bale Robe, Ethiopia, revealed that a proportion of 13%, 13% and 9.6% had knowledge on danger signs of pregnancy, delivery and post-partum period, respectively [24]. On the other site, Hiluf [10], illustrated that most spontaneously mentioned danger signs during pregnancy were vaginal bleeding (10.9%), swollen hands/face (5.2%) and blurred vision (2.2%). Only 82 (15.4%), 14 (2.6%) and 2 (0.4%) mentioned at least one, two and all three key danger signs of pregnancy spontaneously. Eighty eight (16.5%), 59 (11%), 38 (7.1%) and three (0.6%), of the respondents spontaneously mentioned severe vaginal bleeding, prolonged labor, retained placenta and convulsions as danger signs during labor and childbirth, respectively where as severe vaginal bleeding (16.7%), high fever (1.1%), and foul smelling vaginal discharge (1.5%) were mentioned as danger signs during postpartum period [10].

2.4 Practices on birth preparedness and complication readiness

Birth preparedness and complication readiness is globally accepted, easy to implement and efficient enough to be practiced. However, women and significant others are seldom use it [7, 25]. A small scale cross sectional studies from India identified that the BPCR status were 29.5%, 35.8% and 57% in Sukma district of Chhattisgarh, women attending district hospital in Tumkur and rural Darjeeling, respectively [26, 27, 28]. Community based cross- sectional study from Nepal determined that about 1/3rd (34.2%) of the participants were prepared for their last birth [20]. In contrary, another study in Nepal revealed that its magnitude was relatively high, which is 65% [29].

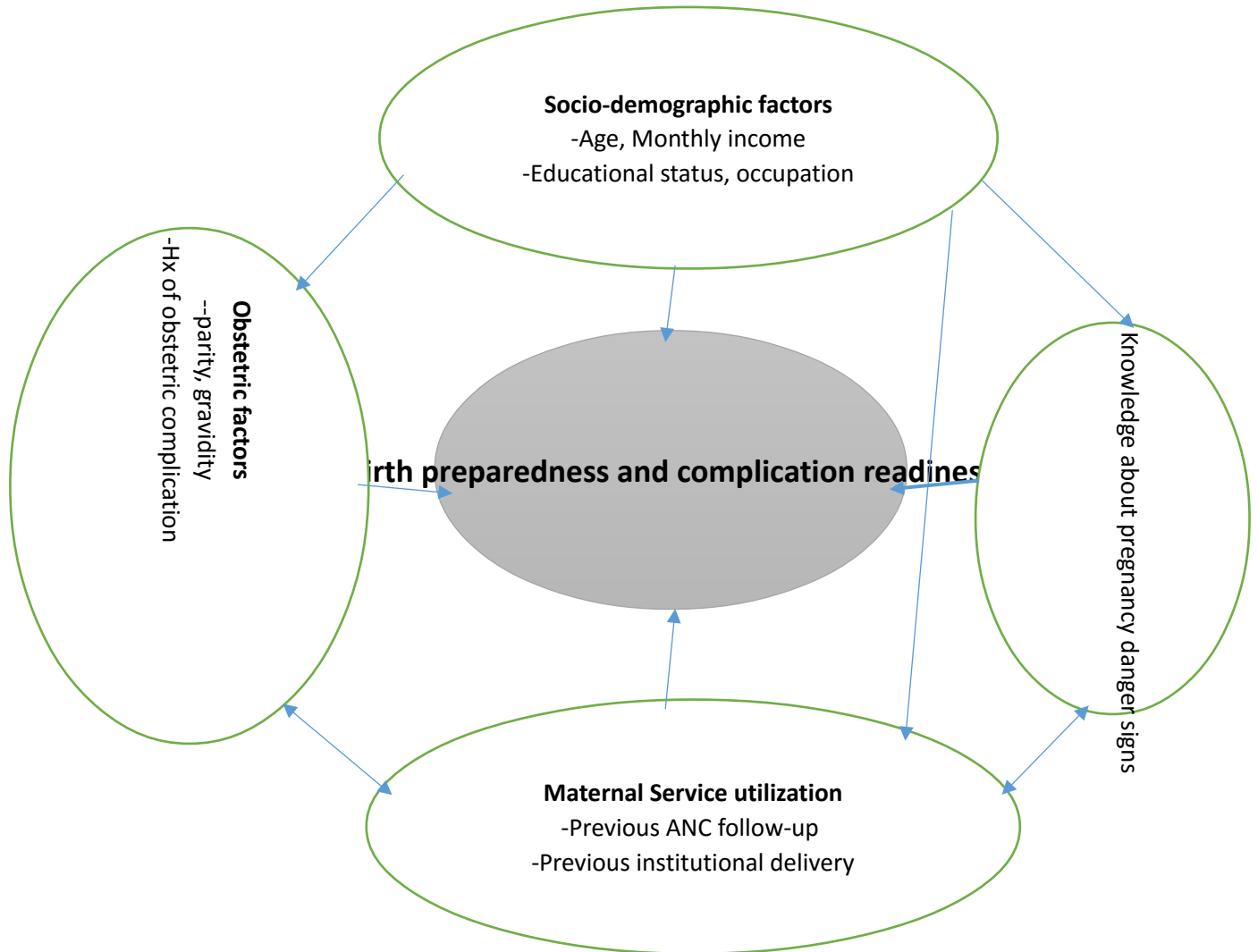
A study in Kenya revealed that the level of birth preparedness is low (20.3%). Among those prepared women, most frequently mentioned components are finances for delivery expenses (74%), place of delivery identification (68%) and mode of transport to the health facility (35%). Maternal education, occupations, average income, marital status, history of still birth and attendance of four or more ANC visit were significantly associated with birth preparedness [30]. Another cross sectional study from Ghana shows that identification of a potential blood donor and a skilled birth attendant were not considered crucial by the respondents [11]. Studies conducted in different parts of Ethiopia revealed that the prevalence of birth preparedness and complication readiness practices among women was ranged from less than 10% to 29.9% [24, 10, 12-15, 31-33]. These findings clearly highlight that the level of well preparedness for birth and its complication in Ethiopia is still very low.

2.5 Factors associated with BPCR practices

A community based cross sectional study in India showed that, preparedness is most likely to be improved with mother's and spouse education status, increase in parity and women who had child birth within two years [26]. In addition, BPCR had association with knowledge of at least three key danger signs while pregnancy, child birth and immediate postpartum period, exposure to BPCR information during ANC follow up. Also, knowledge of place of birth and distance of PHC to house were identified as major determinant for practice of birth preparedness [28]. A study from Nepal done observed that, women's education, ANC service utilization and awareness about obstetric danger signs during pregnancy, delivery and postpartum period are major predictors for BPCR [20]. Although arranging a means of transportation and ANC follow up were not significantly associated with a skilled birth, women's who plan for most of BPCR items are 2-3 times more likely to have an institutional delivery [29]. A health facility based cross sectional study from Ghana indicated that, mother's educational status and residence (living in rural) were significantly associated with birth preparedness plan. But, mother's age, occupation, marital status and religion was not correlated. Furthermore, arranging for potential blood donor and identifying a skilled attendant was perceived as non-significant [11]. Opposing to the above finding, other similar study in Hohoe municipality of Ghana observed that educational status, marital status, residence and parity was not associated with birth preparedness and complication readiness [21].

A study done in Bale Goba, Ethiopia showed that educational status, ANC follows up and knowledge of obstetric danger signs were associated with BPCR [32]. Additionally, assessment of BPCR in Robe district observed that monthly income of (> 716 birr) and previous health facility delivery were significantly associated [24]. An extra cross sectional study in Adigrat town demonstrated that educational status, marital status (married), parity (2-4), history of still birth and being advised during ANC follow up were key predictors of BPCR practices [10]. In summary, most frequently identified factors by most of the investigators were educational status, ANC follow up, knowledge of obstetric danger signs, history of still birth and place of residence.

Figure 1: Thematic representation of factors associated with birth preparedness and complication readiness



Source: Conceptual framework of Factor affecting Birth Preparedness and Complication Readiness.

3. OBJECTIVES

3.1 General Objective

- ❖ To assess BPCR and its determinants among women who gave birth in the last 12 months prior to the study period in Lasta-Lalibela district, North Wollo zone, Amhara regional state, Ethiopia, 2019

3.2 Specific Objectives

- ❖ To assess women's knowledge with respect to obstetric danger signs and birth preparedness and complication readiness components.
- ❖ To determine the magnitude of birth preparedness and complication readiness practices among study participants.
- ❖ To identify determinants of birth preparedness and complication readiness practices among study participants.
- ❖ To increase validity of the result by triangulation of qualitative findings with quantitative findings.

4. METHODS AND MATERIALS

4.1 Study area and Period

The study was conducted in Lasta-Lalibela district, North Wollo Administrative Zone, Amhara Region, Ethiopia. Lasta-Lalibela is located 700 km and 300 km away from Addis Ababa and Bahir Dar, respectively.

The district consists of 28 kebeles which is the smallest administrative unit in Ethiopia. According to the 2018/19 District Finance and Economic Development Office annual statistical report, the total population of the district was 191, 990 (Male: 100,047 and Female: 91,943). Women of childbearing age accounts for 42, 725 of the total population.

Farming and tourism are the predominant sources of income in the community to lead their life.

In terms of infrastructure development, there is one hospital, 8 health centers, 28 health posts, 8 primary schools, 2 high schools, 1 preparatory School and one TVET. In this area there is no any youth and adolescents friendly reproductive health service.

The study was conducted from February 1 to 28/ 2019.

4.2 Study design

A community based mixed methods study was conducted in February 2019 among women who gave birth in the last 12 months preceding the survey irrespective of birth outcome in Lasta-Lalibela district, Amhara Region, Ethiopia.

4.3 Source population

All women in child bearing age group (aged 15-49 years) living in Lasta-Lalibela district.

4.4 Study population

Women who gave birth in the last 12 months prior to the study period in Lasta-Lalibela district.

4.5 Inclusion and Exclusion criteria

4.5.1 Inclusion Criteria

- ✓ Women who gave birth in the last 12 months prior to the survey regardless of their birth outcome were included in the study.

4.5.2 Exclusion criteria

- ✓ Women who were severely ill, mentally not capable of being interviewed and,
- ✓ Women who were not permanent resident (< 6 months) were excluded

4.6 Sample size determination

4.6.1: For the first objective

The sample size for study was determined by using a formula for estimating a single population proportion and assuming a confidence level of 95%, marginal error 5%, and by considering a 22% proportion from previous study [31].

$$n = \frac{Z_{\alpha/2}^2 P(1-p)}{d^2}$$

Where:

- n= sample size
- p= proportion, taking 22% from previous study [31].
- $Z_{\alpha/2}$ = critical value at 95% CI of certainty (1.96)
- d=marginal error of 0.05.

$$n = \frac{1.96^2 (0.22)(1-0.22)}{0.05^2}$$

$$n = 264$$

Design effect= 2 and by adding 10% non-response rate

❖ **Finally, the estimated sample size was:**

$$\text{➤ } 264 * 2 + 10\% = \underline{\underline{581}}$$

4.6.2: For the second/analytical objective

Open epi info version 7 was used to compute sample size for predictors of birth preparedness and complication readiness that has been identified by different literatures. The following assumptions were considered: 95% confidence level, 5% margin of error, exposed to unexposed ratio of 1:1, power of 80%, design effect 2 and 10% non response rate was considered.

Table 1: Double population proportion based sample size determination for a study on birth preparedness and complication readiness among women who gave birth in the last 12months in Lasta Lalibela district, North Wollo zone, Amhara regional state, Ethiopia, from February 1-28, 2019EC.

Variable	Reference	Percent of outcome in unexposed group	Percent of outcome in exposed or OR	Ratio(un exposed :exposed)	Confidence level	Power	Sample size <i>*after design effect & 10% non-response rate</i>
ANC follow up in last pregnancy	[24]	NO: 60.4%	Yes: 39.6%	1:1	95%	80%	198 *436
History of still birth	[10]	NO: 95.7%	YES: 4.3%				12 *28
Educational status	[32]	None 28.6%	Primary level 47.3%				226 *498

Finally, the highest sample size among the objectives was taken as the final sample size for the study, which is 581.

4.7 Sampling techniques

For the quantitative study, multistage sampling technique was employed.

All kebeles in the district were clustered in to 8 groups by considering catchment area of health centers (since these health centers are assumed to be distributed evenly in the district), then three clusters were selected by simple random sampling techniques. A 12months delivery report from each kebele administrative and health extension workers collected and a proportional number of study participants were interviewed in each kebele of selected clusters till the required sample attained.

Attempt to identify the starting household for the cluster was based on a marked coin that has been spin at the center place of each kebele and the data collectors were followed the direction of the mark pointed on the coin, numbering all households along the way. Then a randomly (lottery) selected household was visited first.

For the qualitative study, non-probability purposive sampling method was employed. Individuals were chosen considering their experience, accessibility and willingness to participate. Community leaders and health administrators were actively involved to select and coordinate eligible individuals for discussion. Three FGD were carried out among groups of TBAs, husbands' of women and health professionals. A total 27 discussants (Male=13, Female=14) were involved. Nine discussants who were selected from each cluster in equal proportion.

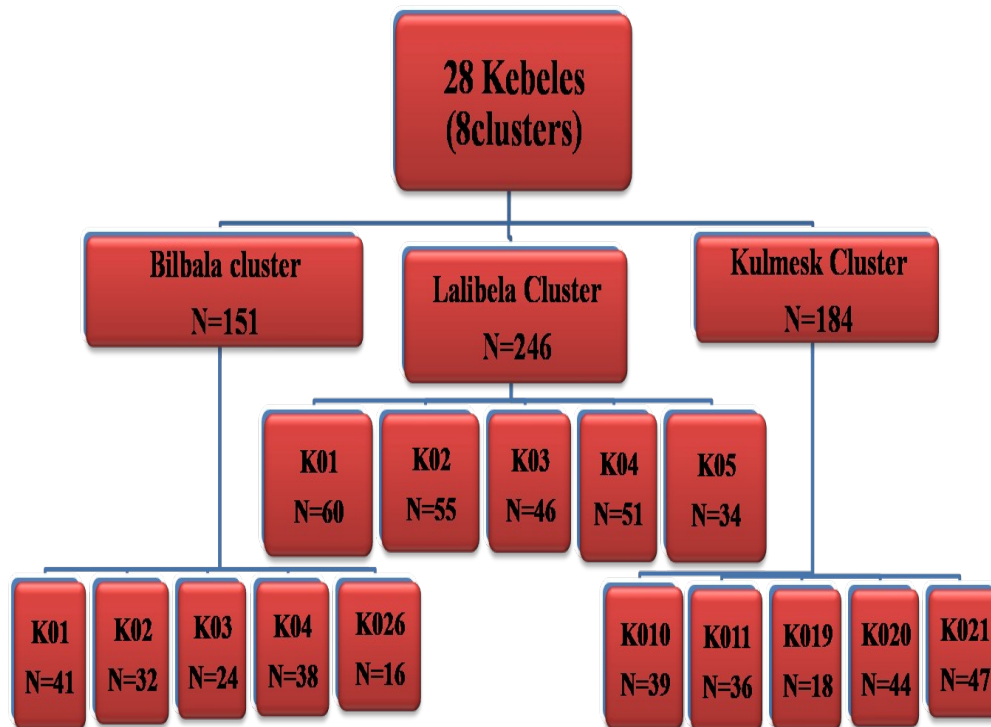


Figure 2: Schematic representation of the sampling procedure

4.8 Data collection tools and procedures

For quantitative data, a pre tested structured interview questionnaire was used for data collection. It was taken from the monitoring birth preparedness and complication readiness: tools and Indicators for maternal and newborn health JHPIEGO, an affiliate of John Hopkins University [6] and adapted according to local context and the objectives of the study. Four diploma holder female data collectors and two female BSc degree nurses were recruited for data collection and supervision respectively. They were intensively trained for two days.

For qualitative part, unstructured open ended FGD guide were prepared to address major determinants of BPCR practices, knowledge on key obstetric danger signs and BPCR components. The principal investigator was modulated the discussion together with well-trained note taker and technical assistant. Informed verbal consent was obtained from each individual prior to joining the group. By using Tape record the whole sessions were recorded not to miss important thoughts. Group discussions were held in health center hall until information saturation level of the conversation achieved.

Table 2: FGD participants' characteristics

Participants	Sex		Age range	Average age	Number of participants	#of FGDs
	M	F				
Traditional birth attendants	0	9	30-55	48	9	1
Husbands	9	0	26-64	46	9	1
Health professionals	4	5	23-48	33	9	1
Total	13	14	27 Participants			

4.9 Study variables

4.9.1 Dependent variables

- Birth preparedness and complication readiness

4.9.2 Independent variables

- Socio-demographic variables: Age, Religion, Ethnicity, Marital Status, Educational status, Monthly income
- Knowledge: on pregnancy, labor and delivery danger signs
- Obstetric variables: history of still birth, parity, history of pregnancy complications
- Maternal service utilization: ANC follow up, institutional delivery

4.10 Operational and term definitions

- **Prepared for birth and ready for complication:** A woman was considered as prepared for birth and its complication if she reported that she identified skilled provider at birth, identified place of delivery, saved money and arrange a means of transportation to place of child birth or for the time of obstetric emergencies ahead of child birth. Those mothers who practiced **at least three of the four** BPCR components were considered as

“prepared for birth and its complication” otherwise “not prepared for birth and its complication” (32).

- **Knowledgeable on key danger signs during pregnancy:** A woman was considered knowledgeable on key danger signs of pregnancy, if she mentioned **at least two** of the three key danger signs for pregnancy (vaginal bleeding , swollen hands /face and blurred vision) spontaneously (32)
- **Knowledgeable on key danger signs during labor/child birth:** if she can mentioned at least three of the key four danger signs for labour/childbirth (severe vaginal bleeding, prolonged labour (>12huors), convulsion and retained placenta) spontaneously (32).
- **Knowledgeable on key danger signs during postpartum period:** if she can mentioned at least two of the three key danger signs for postpartum (severe vaginal bleeding, foul-smelling vaginal discharge and high fever) spontaneously (32).
- **A skilled birth attendant (SBA)** are persons with midwifery skills (Physicians, Nurses, Midwives, and Health Officers) who provides essential and emergency health care services to women and their newborns during pregnancy, childbirth and the postpartum period (10).

4.11 Data quality control

To maintain the validity of the measurement standard questionnaire of monitoring birth preparedness and complication readiness: tools and indicators for maternal and newborn health was taken and modified based on study interest. The questions were translated to local language (Amharic language) and back translated to English to maintain consistency. The instrument was pre tested on 5% of sample size in area that was not included in study and analysis. Modifications were made after pretest. Training was given to data collectors and supervisors. Observation and supervision was done throughout the fieldwork, training and data collection process. In addition meeting with each member of the team on a daily basis to discuss performance and give out future work assignments was performed. Under qualitative aspect, a daylong training for both note taker and technical assistant were provided and each discussion was tape recorded.

4.12 Data Processing and Analysis

The collected quantitative data were coded, entered, and cleaned under Epi-data version 3.1 and analyzed by SPSS version 20. First, descriptive statistics including frequencies, means, median,

range and standard deviations were computed to summarize and present the data of interest. Chi-square test was executed to observe if there is any possible association between independent variables and BPCR practices. Binary logistic regression analysis was executed to show the crude effect of each independent variable on the outcome variable and variables that showed significant association with P value ≤ 0.2 were further subjected to multivariate analysis. Multicollinearity was checked through variance inflation factor. Variance inflation factor >10 and standard error >2 were excluded from multivariate analysis. The magnitude of association was measured through odds ratio at 95% confidence interval and p-value of <0.05 was considered to be significant.

Data from FGDs was clarified, transcribed, coded, categorized and common themes/ideas synthesized. Finally, conclusion established and triangulated with the quantitative data. Main findings of the discussion were presented in narration form.

4.13 Ethical Consideration

Ethical approval was obtained from Ethical Review Committee of Debrebrihan University. Letter of support was obtained from the district health offices before undertaking the study and written informed consent was obtained from the respondents before the interview. For Privacy and confidentiality, all interviews were conducted in private and all cautions were taken to ensure confidentiality. The right of the respondents to refuse to participate in the study was respected.

5. RESULTS

5.1. Socio-demographic characteristics of the respondents

A total of five hundred eighty one women participated in the study. Majority 272(46.8%) of the women were aged ≤ 20 with mean age of 24.1 ± 5.78 years, married 556(95.7%), completed primary education 149(25.6%), Orthodox Christians 549(94.5%), and with a family size of 4 to 6 members 332(57.1%). The mean family size of the women was 4.8 ± 1.77 with a range of 3 to 10. By ethnicity, 565 (97.2%) were Amhara and 16 (2.8%) were Tigryan. More than half of the women were housewives 348(59.9%), and were aged ≤ 20 years at first marriage 415(71.4%).The

mean monthly income of the women was 653.2±1102.82 with a range of 0 to 4000 Ethiopian birr (table 2).

Table 2: Socio-demographic characteristics of the respondents in Lasta-Lalibela District, Ethiopia, 2019 (n = 581).

Variables	Frequency	%
Age of respondents		
≤20	272	46.8
21-25	82	14.1
26-30	130	22.4
≥31	97	16.7
Mean ±SD	24.1±5.78	
Marital status		
Married	556	95.7
Single	5	0.9
Divorced	13	2.2
Widowed	7	1.2
Religion		
Orthodox	549	94.5
Muslim	32	5.5
Ethnicity		
Amhara	565	97.2
Tigray	16	2.8
Educational status		
Illiterate	99	17.0
Read and write	99	17.0
Primary (1-8)	149	25.6
Secondary (9-10)	100	17.2
Preparatory	17	2.9
Certificate and diploma	67	11.5
Degree and above	50	8.6
Occupational status		
House wife	348	59.9
Government employee	118	20.4
Farmer	49	8.4
Merchant	49	8.4
Others	17	2.9
Family size		
≤3	135	23.2
4-6	332	57.1
≥7	114	19.6
Mean ±SD	4.8±1.77	
Age at first marriage		
≤20	415	71.4
≥21	166	28.6

Mean \pm SD	18.96 \pm 2.89
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5.2. Obstetric history of the respondents

Among 581 mothers, 378 (65.1%) were multigravida while 203 (34.9%) were primigravida. The mean gravidity was 2.57 \pm 1.75. Of 378 multigravida women, the majority 299 (79.1%) have had carried up to four pregnancies while 79 (20.9%) have had more than four pregnancies. About half 296(50.9%) of the women had already given birth for 2 to 4 children while 236 (40.6%) had delivered one birth. The mean age of first parity of the women was 19.50 \pm 2.95. Thirty two (5.5%) had history of still birth. Of the total respondents, 32 (5.5%) were pregnant at the time of conducting the study while 388 (66.8%) were aged \leq 20 at the time of their first pregnancy. The mean age of the women during their first pregnancy was 19.50 \pm 2.95 (table 3).

Table 3: Obstetrics characteristics of the women in Lasta-Lalibela District, Ethiopia, 2019 (n = 581).

Variable	Frequency	%
Gravida (total no. of pregnancy)		
1	203	34.9
2-4	299	51.5
\geq 5	79	13.6
Mean \pm SD	2.57 \pm 1.75	
Parity (total no. of birth)		
1	236	40.6
2-4	296	50.9
\geq 5	49	8.4
Mean \pm SD	2.35 \pm 1.56	
History of stillbirth	32	5.5
Age at first pregnancy		
\leq 20	388	66.8
\geq 21	193	33.2
Mean \pm SD	19.50 \pm 2.95	
Pregnant in the study period	32	5.5

5.3. Maternal health service utilization

As depicted in table 4, majority 466 (80.2%) of the respondents were found to have at least one ANC visit during their last pregnancy while 200 (34.4%) attended four or more visits. Wherein 236 (40.6%) of the women reported that their last birth was the first order followed by fourth and above orders 163(28.1%). Four hundred and sixty six (80.2%) respondents gave birth at health institutions supported by skilled health care providers, whereas 115 (19.8%) of respondents gave birth at home. Among the participants who gave birth at the facilities, 415(71.4%) delivered their

last baby spontaneously whereas the remaining delivered via Cesarean section and assisted instrumentally (14.3% each). Likewise, 282 (48.5%) of them used ambulance during their last delivery whereas the remaining transported on foot 217(37.3%), by hoarse 17(2.9%) and carried by people 65(11.2%). Meanwhile, 214 (36.8%) mothers faced at least one problem during pregnancy, delivery and after birth.

Table 4: Antenatal care services among women in Lasta-Lalibela District, Ethiopia, 2019 (n = 581).

Variable	Frequency	%
ANC follow up during last pregnancy	466	80.2
Number of ANC attended in the last pregnancy		
Once	164	28.2
Twice	150	25.8
Three times	67	11.5
Four and above	200	34.4
<i>Last birth order</i>		
First	236	40.6
Second	116	20.0
Third	66	11.4
Fourth and above	163	28.1
<i>Delivery for last child</i>		
Home	115	19.8
Health center	249	42.9
Health post	17	2.9
Hospital	200	34.4
<i>Means of delivery</i>		
Spontaneous	415	71.4
Assisted instrumentally	83	14.3
Cesarean section	83	14.3
<i>Mode of transportation used during delivery</i>		
Foot	217	37.3
Hoarse	17	2.9
Carried by people	65	11.2
Ambulance	282	48.5
Faced any problem during pregnancy, delivery and after birth	214	36.8

5.4. Knowledge on key danger signs of pregnancy, childbirth, and postpartum

With regard to awareness on danger signs of obstetric complications, 253(43.5%) and 50 (5.6%) of the respondents mentioned at least two danger signs of pregnancy and postpartum respectively while 199(34.3%) mentioned at least three danger signs of labor/childbirth. Vaginal bleeding was

found to be the most predominant danger sign of pregnancy 318(54.7%) and postnatal period 547(94.1%) while retained placenta 447(76.9%) was the most frequently mentioned sign of labor and delivery (table 5).

FGD findings revealed that any discharge from the uterus especially bloody discharge is well recognized danger sign during pregnancy. In addition to this absence of fetal movement in uterus is also among the danger signs that they couldn't identify it to the earliest.

Fifty five years old TBA explained that:

“...If the baby die inside, later on his dead parts of the body had a potential to join/mix up with maternal uterus that could cause a lifelong discomfort and pain to the mother’s abdomen and breast area. I was also sharing this problem practically [TBA, 55 years old].”

Discussants were also asked to mention common danger signs during labor and child birth. Most TBAs pointed out that long lasting labor which is for more than 24 hours and, even when placenta remains inside uterus after child birth implies a life threatening condition that needs immediate referral to the nearest health center.

“One of the discussant in husband’s FGD said that I have heard only about mal-presentation, I mean, if buttock comes first as a danger sign and I always prefer to stay outside during labor until birth attendants announced me that ‘enkuan des alehi balebetehi beselam tegelaglalechi’(she gave birth safely) . Hence, not being aside my wife during labor might be one of the reasons for not appreciating all danger signs related to labor and childbirth [Husband, 26 years].”

FGD discussants were asked to mention danger signs of during post partum period. They reported the following:

“Yes, we know that there are too many danger signs that could put the life of the mother at risk during postpartum period. The most severe one is vaginal bleeding”.

Table 5: Proportion of women who reported types of key danger signs during pregnancy, childbirth, and postpartum period in Lasta-Lalibela District, Ethiopia, 2019 (n = 581).

Key danger signs	Pregnancy	Labor delivery	& Postnatal period
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	N	%	N	%	N	%
Vaginal bleeding	318	54.7	400	68.8	547	94.1
Swollen hands/face	298	51.3	-	-		
Blurred vision	150	25.8	-	-		
Convulsions	-	-	67	11.5		
Placenta not delivered within 30 minutes	-	-	447	76.9		
Prolonged labor	-	-	382	65.7		
High grade fever					50	8.6
Malodorous vaginal discharge						

5.5. Knowledge of respondents about BPCR and their sources of information

Respondents were asked whether they have heard about birth preparedness and complications readiness. Consequently, 517(89.0%) of the participants reported that they have heard of the term birth preparedness. Three hundred fifty two (60.6%) of them mentioned at least three key components of BPCR. Arranging for facility birth (77.6%) and identifying mode of transport (65.9%) were among frequently mentioned major BPCR components while preparing clean delivery clothes (94.3%) and preparing porridge (63.2%) were frequently mentioned minor BPCR components.

Table 6: Knowledge on BPCR among women in Lasta-Lalibela district, Ethiopia, 2019 (n = 581).

Variables	Frequency	%
Identifying mode of transport	383	65.9
Arranging for facility birth	451	77.6
Saving money	149	25.6
Identifying skilled birth attendant	201	34.6
Preparing porridge	367	63.2
Preparing clean delivery clothes	548	94.3

Respondents were further asked to indicate the source of information about BPCR. Table 7 depicts the distribution of sources of information. The main source of information about BPCR was from health extension workers 383(74.1%) followed by health professionals 117(22.6%).

Table 7: Proportion of women who heard about BPCR and their source of information in Lasta-Lalibela District, Ethiopia, 2019 (n = 581).

Variable	Frequency	%
Heard about BPCR(n=581)	517	89.0

Source of information(n=517)

Health professional	117(22.6)
Health extension workers	383(74.1)
Neighbors	17(3.3)

5.6. Practices of respondents regarding preparation for birth and its complication

About 465(80.0%) of the women responded that they made arrangement for facility birth, and 365 (62.8%) identified a mode of transportation while preparedness for money (31.5%) and skilled provider (28.7%) was relatively found to be minimal. On the other hand, none of the women prepared for compatible blood donor. The birth preparedness score was computed from key elements of birth preparedness such as; identifying skilled provider at birth, identifying place of delivery, saving money and arranging a means of transportation to place of child birth or for the time of obstetric emergencies ahead of child birth. Taking at least three steps was considered being well prepared. Accordingly, 266(45.8%) of the women on this study were regarded as well prepared for birth and complications (table 8).

The qualitative finding further explored birth preparedness and complication readiness practices in the study area.

“In the previous time most of the mothers had their child birth at home with no preparation for birth & its complication but in the meantime such trends are seldom practiced in the area despite the fact that it’s not adequate enough. Mothers are expected to write down their birth preparedness plan and attach it to their home wall as a reminder. Health extension workers should have to check and monitor mothers plan during home visit. By doing so birth preparedness especially facility birth was improving from day to day even though gaps were still existing [Health professionals, 30 years]”

Discussants also reported that despite health extension workers active involvement in awareness creation, birth preparedness practices here are limited to porridge preparation, arranging newborn clothes, encouraging pregnant women nutrition and preparing blade for cord cut. Besides, birth related complications and death are also widely accepted as a will or punishment of God that a birth plan couldn’t matter the outcome more. As a result, further preparations are better considered once the problem occurred.

“Once upon a time, 29 years old woman was faced a sudden onset of labor that happened approximately at 10pm and we took her to health center carried by people and which was a 3

hours long travel to reach to the facility. On arrival to the health center, a health care provider in charge was examined her and told us to return back to home as it was false labor and no adequate bed to keep her in the facility. Unfortunately, she gave birth on the way to home and very soon she lost her baby. Not only that, she also encountered a significant vaginal bleeding with retained placenta. It was shocking phenomena and we decide to return back her to get medical support. Once we arrived at the health center they put glucose on her hands and referred her to Lalibela primary hospital. In attempt to go to hospital we spent more time while calling for ambulance in a limited network access and dealing with money. Despite this all issues, Thanks to God, she has recovered after 7 days of hospitalization. So, my son, what I want to remind you here is inadequate preparation for birth and its complication put mothers at risk even though unpredictable complications and even death could happen if it is God's will or punishment [Husband, 56 years old].”

Table 8: Birth preparedness and complication readiness among women in Lasta-Lalibela District, 2018 (n = 581).

Variable	Frequency	%
Identify a mode of transportation	365	62.8
Arrange for facility birth	465	80.0
Save money	183	31.5
Identify skilled provider	167	28.7
Prepare porridge	333	57.3
Prepare clean delivery clothes	564	97.1

5.7. Association of socio-demographic characteristics with BPCR

This study demonstrate that socio-demographic characteristics, such as age ($X^2=39.724$; $P=0.000$), educational status ($X^2=1.744$; $P=0.000$), occupation($X^2=96.824$; $P=0.000$), and monthly income($X^2=94.466$; $P=0.000$) of the women showed statistically significant association with birth preparedness and complication readiness. Nonetheless, marital status($X^2=5.33$; $P=0.149$), family size ($X^2= 1.509$; $P=0.470$) and age of women ($X^2=1.665$; $P=0.197$) at first marriage did not show any statistically significant association with birth preparedness and complication readiness (table 9).

Table 9: Association between socio-demographic characteristics of the women and their preparedness to birth and readiness to complication in Lasta-Lalibela District, 2019 (n = 581).

Variables	BPCR		X ²	P-value
	Yes	No		

Age of respondents				
≤20	119(43.8)	153(56.2)		
21-25	17(20.7)	65(79.3)	39.724	0.000
26-30	65(50.0)	65(50.0)		
≥31	65(67.0)	32(33.0)		
Marital status				
Married	256(46.5)	295(53.5)		
Single	0(0.0)	5(100.0)	5.333	0.149
Divorced	5(33.3)	10(66.7)		
Widowed	5(50.0)	5(50.0)		
Educational status				
Illiterate	17(17.2)	82(82.8)		
Read and write	49(49.5)	50(50.5)		
Primary (1-8)	83(55.7)	66(44.3)	1.744	0.000
Secondary (9-10)	17(17.0)	83(83.0)		
Preparatory	0(0.0)	17(100.0)		
Certificate and diploma	67(100.0)	0(0.0)		
Degree and above	33(66.0)	17(34.0)		
Occupational status				
Merchant	16(32.7)	33(67.3)		
Farmer	0(0.0)	49(100.0)		
House wife	149(42.8)	199(57.2)	96.824	0.000
Government employee	84(71.2)	34(28.8)		
Others	17(100.0)	0(0.0)		
Monthly income of the women				
None	166(45.5)	199(54.5)		
None-500	0(0.0)	66(100.0)	94.466	0.000
501-1800	34(50.7)	33(49.3)		
≥1801	66(79.5)	17(20.5)		
Family size				
≤3	68(50.4)	67(49.6)		
4-6	148(44.6)	184(55.4)	1.509	0.470
≥7	50(43.9)	64(56.1)		
Age at first marriage				
≤20	197(47.5)	218(52.5)	1.665	0.197
≥21	69(41.6)	97(58.4)		

5.8. Association of obstetrics characteristics and ANC practices with BPCR

As depicted in table 10, total numbers of pregnancy ($X^2=26.60$; $P=0.000$), history of stillbirth($X^2=4.299$; $P=0.036$), age at first pregnancy ($X^2=5.458$; $P=0.019$), being Pregnant during the study period($X^2=28.597$; $P=0.000$), ANC visit during previous($X^2=76.179$; $P=0.000$) and last($X^2=1.211$; $P=0.000$) gravidities, numbers of ANC visit in the last pregnancy($X^2=42.743$; $P=0.000$), birth at health facility($X^2=58.67$; $P=0.000$) and mode of delivery($X^2=44.422$; $P=0.000$), order of last birth($X^2=53.781$; $P=0.000$) and occurrence of any obstetric complication

during pregnancy($X^2=9.682$; $P=0.000$) were significantly associated with birth preparedness and complication readiness. Wherein Parity($X^2=4.846$; $P=0.089$) and access for transportation during delivery($X^2=0.420$; $P=0.517$) were not showed significant association with birth preparedness and complication readiness.

Table 10: Association between obstetrics characteristics and ANC practices of the women and their preparedness to birth and readiness to complications in Lasta-Lalibela District, 2019 (n = 581).

Variable	BPCR		X ²	P-value
	Yes	No		
Gravida (total no. of pregnancy)				
1	68(33.7)	134(66.3)		
2-4	169(56.0)	133(44.0)	26.601	0.000
≥5	29(37.7)	48(62.3)		
Parity (total no. of birth)				
1	102(43.2)	134(56.8)		
2-4	147(49.7)	149(50.3)	4.846	0.089
≥5	17(34.7)	32(65.3)		
History of stillbirth				
Yes	50(37.9)	82(62.1)	4.299	0.038
No	216(48.1)	233(51.9)		
Age at first pregnancy				
≤20	163(42.3)	222(57.7)	5.458	0.019
≥21	103(52.6)	93(47.4)		
Pregnant during the study period				
Yes	0(0.00)	32(100.0)	28.597	0.000
No	266(48.5)	283(51.5)		
ANC visit during previous pregnancy				
Yes	133(72.3)	51(27.7)	76.179	0.000
No	133(33.5)	264(66.5)		
ANC visit during last pregnancy				
Yes	266(57.1)	200(42.9)	1.211	0.000
No	0(0.0)	115(100.0)		
Number of ANC visit in the last pregnancy				
Once	49(29.9)	115(70.1)		
Twice	67(44.7)	83(55.3)		
Three times	51(76.1)	16(23.9)	42.743	0.000
Four and above	99(49.5)	101(50.5)		
Last birth order				
First	85(36.0)	151(64.0)		
Second	83(71.6)	33(28.4)	53.781	0.000
Third	16(24.2)	50(75.8)		
Fourth and above	82(50.3)	81(49.7)		
Birth at health facility in last delivery				

Yes	250(53.6)	216(46.4)	58.670	0.000
No	16(13.9)	99(86.1)		
<i>Means of delivery</i>				
Spontaneous	166(40.0)	249(60.0)		
Assisted instrumentally	34(41.0)	49(59.0)	44.422	0.000
Cesarean section	66(79.5)	17(20.5)		
<i>Access for transportation during delivery</i>				
Yes	133(47.2)	149(52.8)	0.420	0.517
No	133(44.5)	166(55.5)		
<i>Faced problem during Obstetric</i>				
Yes	150(40.9)	217(59.1)	9.682	0.002
No	116(54.2)	98(45.8)		

5.9. Factors Associated with BPCR Practice

Prior to conducting bivariate analysis, factors that showed insignificant association with BPCR practices in the chi-square test were excluded. Likewise, factors that showed significant association in the chi-square test but having many cells with zero frequencies, such as educational status, occupational status, monthly income of the women, being pregnant in the study period, and ANC visit in last pregnancy were also excluded to avoid uncertainty in the validity of the model.

Bivariate analysis revealed that significant factors associated with knowledge of birth preparedness and complication readiness were age range, multi-gravidity, attendance of antenatal care during previous pregnancy, multiple ANC visit in the last pregnancy, aged twenty and below years at first pregnancy, gave birth at health facility in the last delivery, having adequate knowledge on danger signs of pregnancy, and being encountered with any problem during pregnancy, delivery and after birth.

However, upon multivariate logistic regression predictors of BP/CR practices remained to be gravidity, antenatal care during previous pregnancy, number of ANC visit in the last pregnancy, age at first pregnancy, birth at health facility in the last delivery, knowledge on danger signs of pregnancy, and occurrence of any problem during pregnancy, delivery and after birth. Women with a history of ANC visits during the previous child pregnancy were four times more likely

prepared for birth and complication (AOR = 4.48, 95% CI = 2.68, 7.40) than women who did not undertake ANC follow-up.

Forty nine years old TBA further expressed that:

“Frankly speaking, still now most of the mothers particularly older mothers preferred to give birth at home with the help of traditional birth attendants but we are not willing to do so for fear of HIV/AIDS, penalty by the government and prohibition from access to public services. I remembered when I assisted a home delivery of 35 years old mother and consequently I was deprived of having ‘saftynate’ food program. Greater interest on home birth ceremony, poor infrastructure facility, successful home delivery during the previous decades and better relaxation including freedom of shouting were among the reasons for home delivery and poor birth preparation practices so far”. Such attitudes among older mothers in return could reduce ANC follow up and their mind setup to learn something new knowledge about birth preparedness and complication readiness [Traditional birth attendant, 49 years old].

Women aged below 21 during the first child pregnancy were two times more likely prepared for birth and complication (AOR = 2.41, 95% CI = 1.11, 5.26) than aged 21 and above. Primigravida mothers were two times more likely prepared for birth and complication (AOR = 2.1, 95% CI: 1.26, 3.52) than multigravida (≥ 5 pregnancies) mother.

FGD findings strengthen that younger women are the front beneficiary of maternal waiting home services involving closed follow up and access to health education as they have had no or few number of children to care and to let them alone at home. On the other hand, older mothers are subjected to resource and time constraints because of their big family size and caring their children and other house workloads. For that matter, young mothers made better birth preparation in the area [Health professional, 33years old].

Mothers who attended three ANC visits in the last child pregnancy were six times more likely prepared for birth and complication (AOR=6.06, 95% CI=2.99, 12.24) than four and above visits while those with one ANC visits in the last pregnancy were less likely to prepare for birth and complication (AOR=0.26, 95% CI= 0.15, 0.46) than mothers who attended four and above ANC visits. Mothers who gave birth at health facility in the last delivery (AOR = 4.65, 95% CI = 2.56, 8.44), aware of danger signs of pregnancy (AOR = 2.96, 95% CI = 1.04, 8.47) and encountered

any obstetrics problem (AOR = 4.66, 95% CI = 2.05, 10.59) were found about five, three and five times more likely to be prepared for birth and complication respectively, as compared to their counter parts.

In FGDs, majority of the discussants agreed that the ups and downs laborious topography of the area together with poor road construction or limited transportation access were the most significant barriers for birth preparedness and complication readiness practices. As a result mothers had no ANC visit or only one antenatal care follow up throughout their pregnancy.

“We had an ambulance service in the area but the actual challenge is we couldn’t access it on time when required during critical times. Unfortunately, some far kebeles with no transportation access or poor infrastructures are usually marginalized from ambulance service and they came to facility through homemade carrier and on foot most of the time. Thinking about such challenge has made birth preparedness practice difficult and home delivery more prevalent [Husband, 52 years old].”

Table 11: Logistic regression model output for factors associated with BPCR practices among women in Lasta-Lalibela District, Ethiopia, 2019 (n = 581).

Variables	Practice of BPCR		COR(95%CI)	AOR(95%CI)
	Yes (%)	No (%)		
Age range				
≤20	119(43.8)	153(56.2)	1	
21-25	17(20.7)	65(79.3)	5.67(2.23, 14.43)*	
26-30	65(50.0)	65(50.0)	0.01(0.001, 0.025)*	
≥31	65(67.0)	32(33.0)	0.00(0.00,-)	
Gravida (total no. of pregnancy)				
1	68(33.7)	134(66.3)	1.97(1.47, 2.64)*	2.1(1.26, 3.52)*
2-4	169(56.0)	133(44.0)	0.79(0.63,0.99)*	0.84(0.49, 1.45)
≥5	29(37.7)	48(62.3)	1	1
ANC visit in the last pregnancy				
Once	49(29.9)	115(70.1)	0.17(0.08,0.34)*	0.26(0.15,0.46)*
Twice	67(44.7)	83(55.3)	0.73(0.44,1.19)	1.38(0.84,2.26)
Three times	51(76.1)	16(23.9)	3.88(2.19,6.88)*	6.06(2.99,12.24)*
Four and above	99(49.5)	101(50.5)	1	1
ANC visit during previous pregnancy				
Yes	133(72.3)	51(27.7)	6.18(2.73, 13.98)*	4.48(2.68, 7.40)*
No	133(33.5)	264(66.5)	1	1
Age at first pregnancy				
≤20	163(42.3)	222(57.7)	3.05(1.25, 7.41)*	2.41(1.11, 5.26)*
≥21	103(52.6)	93(47.4)	1	1

Birth at health facility in last delivery

Yes	250(53.6)	216(46.4)	3.80(1.52, 9.49)*	4.65(2.56, 8.44)*
No	16(13.9)	99(86.1)	1	1

Know at least 2 key danger signs of pregnancy

Yes	133(52.6)	120(47.4)	3.38(1.40, 8.18)*	2.96(1.04, 8.47)*
No	133(40.5)	195(59.5)	1	1

Faced problem during Obstetric

Yes	150(40.9)	217(59.1)	5.85(2.63, 13.00)*	4.66(2.05, 10.59)*
No	116(54.2)	98(45.8)	1	1

6. DISCUSSION

Health care services during pregnancy and after delivery are pivotal for the survival and wellbeing of both the mother and the infant. In line with this, skilled care during pregnancy, childbirth, and the postpartum period are important interventions in reducing maternal and neonatal morbidity and mortality. As per the 2015-16 Health Sector Transformation Plan, maternal and newborn health are priorities for the Government of Ethiopia [34]. The HSTP key components are delivery at a health facility, with skilled medical attention and hygienic conditions; reduction in complications and infections during labor and delivery; timely postnatal care that treats complications from delivery; and education of the mother on care for herself and her infant.

The present study revealed that the coverage of mothers who received antenatal care from a skilled provider for their recent births was higher (80.2%) compare to the 2016 EDHS national (62.0%) and regional (67.1%) report and other studies reported elsewhere in the country [35, 36]. Whereas proportion of mothers who had at least four ANC visits (34.4%) was comparable to the 2016 EDHS national report (32%) [9]; and lower compared to Adigrat (73%), Nigeria (56%) [51].

Knowledge of danger signs of obstetric complication is the first step motivating women to seek timely, skilled birth attendance care at appropriate health facility. Every woman need to be aware of the likelihood of complications during pregnancy, childbirth/labor, and the postpartum periods. Women and their spouses and community members should be given all the information on danger signs [38]. The level of awareness on danger signs of pregnancy (43.5%) and labor/delivery (34.3%) in the present study setting is relatively very low compare to Nigeria (80% & 77%, respectively) [51], but promising as compared to Adegerat and South Wollo areas in Ethiopia [10, 37] and in Kenya [39]. On the other hand, awareness on danger signs of postpartum period (5.6%) in the present study area is minimal compare to studies in Abeshige district (20%) [52] in Ethiopia; and in India (37.2%) [53] & Nigeria (76%) [51]. This could enlighten poor counseling or information gap during antenatal care service provision and inadequate number of subsequent ANC visits made by the women in the area. Regular attendance to antenatal care provides an opportunity to inform and educate pregnant women about pregnancy, childbirth, and care of the newborn and therefore enable pregnant women

acquire information on danger signs of pregnancy or child birth [19]. On the other hand, low level of awareness in the present study area call for comprehensive community based health education.

Level of awareness on BPCR is important in averting delays in care during pregnancy and childbirth, thus leading to reduced maternal and newborn morbidity and mortality. Knowledge on BPCR among women (60.6%) in the present study was relatively higher compare to many reports in Ethiopia [40, 41] and elsewhere in Africa [47-49]. The observed disparity could be attributed to variations in study populations, definition of knowledge of birth preparedness and complication readiness and study settings.

Similarly, 45.8% of the respondents were prepared for birth and its complications, which is higher than study conducted in Goba woreda (29.9%), Adigrat (22%), Aleta Wondo(17%), Arsi Robe(16.5%). This might be due to the difference in study period and also due to the greater effort made by HEWs on creating awareness in the area. In light of this, 89.0% of the women were heard about BPCR while health extension workers (74.1%) being the main source of information. Such promising BPCR practices in the study area are suggestive for considerable efforts made by HEWs in scaling up community awareness. However, this finding is much lower compared to BPCR practice in Imo state of Nigeria (77%) and in Sri Lanka (83.5%) [54]. This could be due to socioeconomic characteristics difference and better trends in ANC service utilization as this in fact best explained by nearly 70% mothers in Sri Lanka has made ≥ 5 ANC visits.

In the present study, arrangement made by the women for facility birth (80.0%) and transportation (62.8%) was higher than a study in Adigrat and Debrebirhan town [10, 42]. This could be due to difference in transportation as having poor transport access in the area could alarm mothers for early arrangement and increased awareness of mothers by HEWs towards identifying transportation ahead of childbirth to health facilities. Arranging transport ahead of time reduces the delay in seeking and reaching services. On the other hand, preparedness for money (31.5%) and skilled provider (28.7%) was relatively minimal while no preparedness was made at all for compatible blood donor. This finding reflects potentially important information gaps regarding all BPCR components and need for comprehensive training for health providers

on how to advise pregnant women on components of BPCR. In addition, absence of substantial/permanent sources of income in the area might contribute to the problem.

Multivariate logistic regression identified gravidity, antenatal care during previous pregnancy, number of ANC visit in the last pregnancy, age at first pregnancy, birth at health facility in the last delivery, knowledge on danger signs of pregnancy and history of obstetric complication as major determinants influencing BPCR practices in the study area.

Primigravidity was found to be as one of significant predictor for better BPCR practices. Primigravida women were two times more likely prepared for birth and complication than multigravida (≥ 5 pregnancies) mother. This finding is in line with most studies done elsewhere [35, 36, 43]. This can be explained by the fact that those women might be younger and has better understanding about the advantages of BPCR, or due to their less experience in child birth that might lead to develop fear about the difficulties during birth. This could motivate them to seek for better BPCR practices. The other possible explanation for the low BPCR practices among multigravida women could be due to resource and time constraints because of their big family size and caring their children and other house workloads. In addition, multigravida women could have more experience on child birth and they might think delivery is normal and develop self-reliance and preferred to give birth at home with mothers and relatives assistance.

Moreover, received ANC has appeared as a significant predictor on better BPCR practices. Mothers who attended antenatal follow up for the previous pregnancy have four times higher chances of practicing BPCR. Mothers who attended multiple ANC visits in the last child pregnancy have better chance of practicing BPCR. This finding is consistent with earlier studies elsewhere [44, 45]. The possible explanation is that women who had much antenatal care follow up could be received advice and health education about pregnancy related complications and advantages of giving birth at a health facility and assisted by skilled attendant.

Women aged below 21 during first pregnancy had better BPCR practices than 21 and above years. This may attributed to greater chance of acquiring pregnancy related complications in the teenage pregnancy, which in turn promotes BPCR practices among these groups of women. Teenage pregnancy is a major health concern because of its association with higher morbidity

and mortality for both the mother and the child. Childbearing during adolescence is known to have adverse social consequences [9].

Women with knowledge of at least two key danger signs during pregnancy were more likely to be well prepared, which is consistent with study done in Wolayta Zone [31] and Uganda [46]. Knowledge on danger signs of obstetric complications is essential for women to seek skilled birth attendants. The study revealed that women with history of obstetric complication were more likely to be well prepared than their counterparts. This finding is in agreement with a study done in Wolayta Zone [31] and Adigrat [10]. The possible explanation could be that mothers with history of obstructed conditions have practical experience about the life treating conditions than those who did not and could motivate the mother towards a better BPCR practices.

7. STRENGTH AND LIMITATION OF THE STUDY

The strength of this study is it applied standardized tools, tried to triangulate qualitative findings with quantitative, considered large sample size and had zero level of non response rate (100% response rate). On the other hand, it was also subjected to a number of limitations including inability to demonstrate a cause effect relationship as it's a cross sectional study, possibility of recall bias as information were collected about events that has been practiced 12months prior to study period.

8. CONCLUSION AND RECOMMENDATIONS

8.1 CONCLUSION

In this study a prominent information gaps were evident in key danger signs of obstetric complications, especially in regards to danger signs of postpartum period. Level of BPCR practices among women was low. Their knowledge and practice were much lower in regards to saving money and identifying skill birth attendant while no preparedness in terms of identifying compatible blood donor. Meanwhile, number of pregnancy, ANC use during previous pregnancy, number of ANC visit in recent pregnancy, age at first pregnancy, birth at health facility, knowledge of key danger signs during pregnancy and history of obstetric complications were identified as factors affecting BPCR practices.

8.2 RECOMMENDATIONS

Based on the above information, the following recommendation can be made;

A) Program Level (Zone Health Department/ Woreda)

- ✓ North Wollo zonal health department should pay due attention on scaling up institutional health care services, with special emphasis given to transportation service.

B) Policy maker (Regional and national level)

- ✓ The government officials and partners that are working in areas of maternal health should come up with sound strategies to improve birth preparedness at individual and community level.

C) Facility level

- ✓ A prominent information gaps were evident in key danger signs of obstetric complications. Hence, there should be improvement in providing sufficient information during ANC and its follow up, with special emphasis given to birth preparedness and obstetric complications.

D) Community level.

- ✓ Community health workers should be actively involved in awareness creation of key danger signs.

E) Further researches

- ✓ The impact of birth preparedness and complication readiness intervention on pregnancy outcome is not clearly stated though highly recommended. So, it demands further studies.

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ANNEXES

Annex-I: Information sheet and consent form

Information sheet

Good morning/afternoon/evening

My name is I represent the data collection team of Debre Berhan University researcher that intended to conduct a study on birth preparedness and complication readiness among women who delivered 12 months preceding the data collection period. We are speaking with women with respect to birth related experiences and practices during the previous pregnancy. The results of this survey will be used to help improve health programs for women.

I would like to ask you a few questions if I may, but you can refuse to answer any question I ask at any time. The interview will take not more than 30 minutes. The information obtained from respondent will only used for the purpose of this study. Your name will not be written in this form and all the information that you provide will be kept confidential. Frankly speaking there are no any incentives in return to your participation. However, your willingness to answer all of the questions is appreciated as it intended to improve mother's health.

Honestly speaking, Participating in the study does not involve any risks.

If you have any question about this study, you can contact me through the address listed below.

E-mail: alebieabrham@gmail.com or abrhamab3@gmail.com

Tel: +2519 20 47 87 51 or +2519 68 60 98 22

May I proceed with the questions? Yes/No

Name of interviewer _____

Date _____

Consent form

I am already informed that this project is aimed at assessing birth preparedness and complication readiness among women who gave birth 12 months prior to the data collection period. It is also intended to improve maternal health programs in Lasta-lalibela district. I am also informed that the study is interviewer administered questionnaire and the right whether to stop or continue the interview at any time is ultimately depends on my own virtue/decision. Besides, I have been informed that any incentives/payment in return to my willingness to take part is not present. I also informed that the information I provide will be treated confidentially. I realize that the findings of this study will have some impact on improving maternal related programs. Finally, I am also well-versed that Mr. Abreham Alebie, the principal investigator of this project, will take care of responsibility for all matters pertaining to the information that I provide and I can reach him with the address listed below if I have had any concern.

E-mail: alebieabrham@gmail.com or abrhamab3@gmail.com

Tel: +2519 20 47 87 51 or +2519 68 60 98 22

Taking in to account of the above facts that I have been already informed:

I am willing to participate..... I am not willing to participate.....

Signature.....

Signature.....

Date

Date.....

Thank you!!!!!!!!!!!!!!!!!!!!!!

Annex-II: English version Questionnaire

INSTRUCTION: Please indicate your response by circling in the appropriate number or write where necessary, from the choices given in each question.

Part I: Socio-demographic characteristics

No	Questions	Response	Skip
10 1	Age in Years (age in complete years)	_____ years	
10 2	Religion	1. orthodox 2. protestant 3. Muslim 4. other, specify	
10 3	Ethnicity	1. Amhara 2. Oromo 3. Tigre 4. others, specify	
10 4	Marital status	1. Single 2. Married 3. Divorced 4. Widowed 5. Separated	
10 5	What is the highest grade you have completed?	1. Illiterate 2. Elementary (1-8) 3. High school (9-10) 4. Preparatory (11-12) 5. College diploma 6. BSc and above	

10 6	Occupation	1. Merchant 2. Farmer 3. House wife 4. Government employee 5. Others.....	
10 7	How much do you earn per month (ETB)?ETB	
10 8	What was your age at first marriageYears	
10 9	What is the level of education of your husband (for those married only)?	1. Illiterate 2. Elementary (1-8) 3. High school (9-10) 4. Preparatory (11-12) 5. College diploma 6. BSc and above	
110	Occupation of your husband (for those married only)	1-Farmer 2-Merchant 3-Government employee 4-Daily laborer 5-other specify-----	
111	How much income does your husband get from his work /monthin ETB	
112	How many of you are living in your house hold	_____	
113	Who is the decision maker in the house hold	1.Self 2-Husband 3-Self and husband 4-Others,specify-----	

Part II Obstetric History

S. NO	QUESTIONS	Possible answers	Skip
201	What is the number of births you gave up to now(include if there is still birth or died soon)	_____	
202	At what age was your first pregnancy?		
203	Have any of your pregnancies resulted in a baby that	1. Yes (skip to q.204)	

	was born dead (a stillbirth)?	2. No	
204	How many of these pregnancies resulted in a baby that was born dead?	-----	
205	How many of these pregnancies resulted in a baby that was born alive? (PROBE: Any baby who cried or showed signs of life but may have later died?)	-----	
206	What outcomes did you face during your recent pregnancy and child birth?	1-Abortion 2-Live birth 3-Still birth 4-Others,specify-----	
207	Are you pregnant now?	1. Yes 2. No	

PART III: KNOWLEDGE

Now I would like to ask you some questions about pregnancy and childbirth. Specifically, I am going to be asking you questions about three different phases that women go through when having a child. These phases are the period of being pregnant, the period of labor and birth, and the period immediately after the birth of the child.

Q. No	Question	Code	Go to
301	In your opinion, can unforeseen problems related to pregnancy occur during any pregnancy or childbirth that could endanger the life of a woman?	1. Yes 2. No 3. Don't know	
302	In your opinion, what are some serious health problems that can occur <u>during pregnancy</u> that could endanger the life of a pregnant woman? PROBE: Any others?	1. Vaginal bleeding 2. swollen hands/face 3. blurred vision 4. severe headache 5. convulsions 6. high fever 7. loss of consciousness 8. difficulty breathing 9. severe weakness 10. severe abdominal pain	

		<ul style="list-style-type: none"> 11. accelerated/ reduced fetal movement 12. water breaks 13. without labor 14. other (specify) 15. none 16. don't know 	
303	In your opinion, could a woman die from [this problem] any of these problems?	1. Yes 2. No 3. don't know	
304	In your opinion, what are some serious health problems that can occur during labor and childbirth that could endanger the life of a pregnant woman? PROBE: Any others?	<ul style="list-style-type: none"> 1. severe vaginal bleeding 2. convulsions 3. placenta not delivered 30 minutes after baby 4. labor lasting >12 hours 5. severe headache 6. high fever 7. loss of consciousness 8. other (specify) 9. none 10. don't know 	
305	In your opinion, could a woman die from [this problem] any of these problems?	1. Yes 2. No 3. don't know	
306	In your opinion, what are some serious health problems that can occur during the first 2 days after birth that could endanger the life of the woman?	<ul style="list-style-type: none"> 1. Severe vaginal bleeding 2. high grade fever 3. malodorous vaginal discharge 4. severe headache 5. blurred vision 6. convulsions 7. swollen hands/face 8. loss of consciousness 9. difficulty breathing 10. severe weakness 	

		11. other (specify) 12. none 13. don't know	
307	In your opinion, could a woman die from [this problem] any of these problems?	1. Yes 2. No 3. don't know	
308	Have you ever heard the term "birth preparedness"?	1. Yes 2. No	
309	If yes, from whom did you hear?	1.health professionals 2.health extension workers 3.radio 4. television 5. from neighbors 6. books and other literatures 7. Others (specify).....	
310	Have you ever prepared for birth during your last pregnancy?	1. Yes 2. no	
311	In your opinion, what are some things a woman can do to prepare for birth?	1. identify mode of transport 2. arrange for facility birth 3. save money 4. identify blood donor 5. identify skilled provider 6. other (specify)	

Part IV- SERVICE UTILIZATION

S. NO	QUESTIONS	POSSIBLE ANSWERS	SKIP
401	Did you attend ANC before?	1. Yes 2. No	
402	Do you think ANC is useful?	1. Yes 2. No	
403	Do you attend ANC during your last pregnancy?	1. Yes 2. No	
404	At what week/month did you start your ANC?	-----	
405	Who attended your ANC visit?	1-Skilled health professional (Midwife, Nurse & Doctor)	

		2-HEW 3-TBA 4-Others (specify) -----	
406	How many times you attended ANC in your last pregnancy?	1-Once 2-Twice 3-Three times 4-Four and above	
407	Did you have a birth plan in your last pregnancy?	1. Yes 2. No	
408	If yes what arrangements you have done?	1. identify mode of transport 2. arrange for facility birth 3. save money 4. identify skilled provider 5. identify blood donor 6. grain for porrage 7. buying cloths 8. other (specify)	
409	Do you think that plan for place of delivery is important?	1.yes 2.no	
410	Did you plan for place of delivery?	1. Yes 2. No	
411	Where were your last deliveries?	1-Home 2-Health post 3-Health center 4-Hospital 5-Others, specify-----	
412	Why do you prefer to deliver at home? (Possible to answer more than one answer)	1-Need to be with relatives 2-Prefer home ceremony after delivery 3-B/c of the cost is cheap 4-Presence of TBAs 5-My husband accepts it 6-My previous home deliveries were normal 7- Lack of transport	

		8-The health facility is too far 9-Health care providers approach are not good 10-No female provider 11-Lack of accompanying family members 12-Others,specify	
413	Why do you prefer to deliver at health facility? (for those who delivered at health facility only)	1-The facility is near to me 2-Gave better service 3-I had better out come before 4-Health workers advice 5-Difficulty of labour 6-I had problem with previous home deliveries 7-Others,specify-----	
414	In what way did you give birth before?	1-Spontaneous vaginal delivery 2-Instrumental delivery 3-Cesarean section 4-I didn't remember 5-Others,specify-----	
415	Have you given birth at health facility?	1. Yes 2. No	
416	If Yes, how many births have you given?	
417	Is plan to have skilled attendant at delivery useful?	1. Yes 2. No	
418	Who attended your delivery in your last birth?	1-Doctor 2-Nurse 3-HEW 4-TBAs 5-Others (specify).....	
419	What was the outcome of your last delivery?	1-Live birth 2-Live birth but died soon 3-Still birth 4-Others,specify-----	
420	Did you save money for unforeseen	1. Yes 2. No	

	emergency conditions?		
421	Did you plan for transport for emergency at delivery?	2. Yes 2. No	
422	So what was your transport?	1-On foot 2-On hoarse back 3-Carried by people 4-Seeking ambulance 5-Others,specify	
423	Did you prepare blood donor	1. Yes 2. No	
424	Do you think it is important	1. Yes 2. No	
425	Have you been encountered with any problem during pregnancy, delivery and after birth	1. Yes 2. No	
426	If yes, what was the problem	1-Excessive vaginal bleeding 2-prolonged labour(>12 hr) 3-Retained placenta(>1 hr) 4-Inability to control urine/faces/both 5-Mal presentation 6-Fetal death 7-Early rapture of membrane 8-Fver and offensive vaginal discharge 9-Loss of consciousness 10-Others ,specify	
427	Did you go to a health facility for assistance?	Yes 2. No	
428	If yes, who went with you there?	1-Husband 2-Relatives 3-Community emergency committee 4-With health care provider 5-Others ,specify	
429	What order was your last birth?	1-First 2-Second 3-Third 4- Four and above	

Thank you!

Annex-III: Amharic version questionnaire

የመረጃ ማሳወቂያ ቅጽ

በቅድሚያ ጤና ይስጥልኝ

እኔ እባላለሁ፡፡ ባለፉት 12

ወራት ውስጥ የወለዱ እና ቶች ላይ ከወሊድ ጋር በተያያዙ ጉዳዮች አንዳንድ መረጃዎችን ለመጠየቅ ከደብረ-

ብርሀን ዩኒቨርሲቲ የጥናት ቡድን አባላት ጋር መረጃ ለማሰባሰብ የተወከልኩ ስሆን የምትሰጡኝ መረጃዎች እና ቶችን ጤና ከማሻሻል አንጻር ጉልህ ሚና ይጫወታል፡፡

በመሆኑም እርስዎ ካሉት እና ቶች መካከል በእጣየተመረጡ ሲሆን የምትሰጡን መረጃ ከሚመለከታቸው የጥናት አባላት ውጭ ለማንም ይፋ አይሆንም፡፡

በተጨማሪም ስምዎን ስለማይጠቅስ ስጋት እንዳይገባዎት፡፡

በዚህ መጠይቅ ላይ የመሳተፍ ምሆነያ ለመሳተፍ መብት ዎ የተጠበቀ ነው፡፡

ለሚያደርጉልን ብብር የሚከፈልን ገር የለውም፡፡

ነገር ግን የእና ቶችን ጤና ለማሻሻል የታሰበ እንደመሆኑ መጠን የበኩል ዎትን አስተዋጽኦ ለይደርጉ የሚደነቅ ነው፡፡

ማንኛውንም አይነት ጥያቄ መጠየቅ ቢያስፈልገዎት ከዚህ በታች ባለው አድራሻ በማንኛውም ስክት ሊያገኙን ይችላሉ፡፡

ስልክ ቁጥር: 0968609822 ወይም 0920478751

ኢሜል አድራሻ: alebieab3@gmail.com or alebieabrhan@gmail.com

ደብረ-ብርሀን ዩኒቨርሲቲ፣ ደብረ-ብርሀን

ለመሳተፍፍቃደኛነዎት?

1. አዎ

2. አይደለሁም

የመረጃሰብሳቢውስም: -----

ፊርማ: -----

ለትብብርዎክልብእናመሰግናለን!!!!!!!!!!!!!!!!!!!!

የግለሰብስምምነትቅጽ

ይህጥናትከ

12

ወርበፊትየወለዱእናቶችላይከወለድእቅድእናዝግጅትጋርበተያያዘከወላድእናቶችየሚሰበሰቡበጥናታዊመጠይቅመሆኑንበሚገባተረድቻለሁ።ጥናቱምከደብረ-

ብረሀንዩኒቨርሲቲየማህበረሰብጤናየማስተርተማሪበሆኑትበአቶአብርሃምአለቤየሚሰራነው።

በተጨማሪምየእናቶችንጤናከማሻሻልአንጻርጥናቱጉልህሚናአንደሚጫወትእናየምሰጠውመረጃበሚሰጥርእንደሚያዝእናስሜምእንደሚይካተትአውቂያለሁ።

ለማደርገውትብብርምንምአይነትክፍያእንደሌለውእናበኔፍጹምፍቃደኛነትላይየተመሰረተተሳትፎመሆኑንምተረድቻለሁ።

ሁሉንም ጥያቄዎች ለመመለስ የማደርገው ጥረት የሚደነቅቢሆንም አስፈላጊ ሆኖ ከተገኘ በማንኛውም ሰዓት መጠይቁን የማቁረጥ መብቴ የተጠበቀሁ ሆኑ በሚገባ ተገልጾልኛል።
በመጨረሻም ማንኛውንም አይነት ጥያቄ በማንኛውም ሰዓት መጠየቅቢያ ስፈልገኝ ጥናቴን በበላይነት የሚያጠናውን አቶ አብርሃም አለቤን ከዚህ በታች በተጠቀሰው አድራሻ ማግኘት እንደምችል ተገንዝቤ ያለሁ።

ስልክ ቁጥር፡ 0968609822 ወይም 0920478751

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ደብረ-ብርሃን ዩኒቨርሲቲ፣ ደብረ-ብርሃን

ከላይ ያሉትን መረጃዎች ግምት ውስጥ በማስገባት በጥናቴ ላይ ለመሳተፍ፡

- 1. ፍቃደኛነኝ
- 2. ፍቃደኛ አይደለሁም

ፊርማ.....

ፊርማ.....

ቀን.....

ቀን.....

አመሰግናለሁ።

በዓማርኛ የተዘጋጀ ቃለ መጠይቅ

የሱፐርቫይቫንስ----- ፊርማ-----ቀን-----
 የጥያቄክድ----- ቀበሌ----- ጎጥ----- የቤትቁጥር-----
 ማሳሰቢያ፡ ምርጫያላቸውን መልሶችን ይክበቡ ዝርዝር የሚያስፈልጋቸውን በክፍት ቦታ ላይ ይጻፉ
 ክፍል 9ን ድ፡ ማህበራዊና ስነ ህዝባዊ መረጃዎች

ተራ. ቁ	ጥያቄዎች	የማራጭ መልሶች	ወደሌላ ጥያቄ
101	ዕድሜ ሽሽንት ነው	_____ ዓመት	
102	የምን ሀይማኖት ተከታይ ነሽ	ኦርቶዶክስ ተዋህዶ ፕሮቴስታንት ሙስሊም የሌላ (ይጠቀስ)	
103	ብሄር ሽምን ድን ነው	አማራ አሮሞ ትግሬ አገው ሌላ ካለ ይጥቀሱ----	
104	የጋብቻ ሁኔታ ነሽ	ያገባች 2-ያላገባች 3-የተፋታች 4-ባልየሞተባት 5-ዓግብታ የማታወቅ 6-ሌላ ካለ ይጥቀሱ----	
105	የትምህርት ደረጃ ሽሽንት ነው	ያልተማረች ማንበብ እና መጻፍ የምትችል ከ 1-8 የተማረች ከ 9-10 የተማረች ከ 11-12 የተማረች ኮሌጅ ዲፕሎማ ድግሪ እና ከዛባ ላይ	

106	ስራዎችን ያደገው	ነጋዴ አርሶአደር የቤት እመቤት የመንግስት ሰራተኛ ሌላ ካለ ይጥቀሱ----	
107	በወር ስንት ብር ያገኛሉ ብር	
108	መጀመሪያ ሲያገቡ ዕድሜዎ ስንት ነበር አመት	
109	የባለቤት ዎ የትምህርት ደረጃዎን ይመስላል (ላገቡ ብቻ የሚጠየቅ)	ያልተማረች ማንበብ እና መጻፍ የምትችል ከ 1-8 የተማረች ከ 9-10 የተማረች ከ 11-12 የተማረች ኮሌጅ ዲፕሎማ ድግሪ እና ከዛ በላይ	
110	የባለቤት ዎ ስራዎችን ያደገው (ላገቡ ብቻ የሚጠየቅ)	ነጋዴ አርሶአደር የቀን ሰራተኛ የመንግስት ሰራተኛ ሌላ ካለ ይጥቀሱ----	
111	ባለቤት ዎ ከሚሰራው ስራዎች ያህል ገቢ ያገኛል ብር	
112	በዓንድ ቤት ውስጥ ስንት ሆናቸው ስራ ላቸው	_____	
113	በቤተሰቡ ውስጥ ወሳኔ ሰጪ ማንኛው	ዕኔራሴ ባለቤቴ 3-ሁለታችንም 4-ሌላ ካለ ይጥቀሱ-	

ክፍል ሁለት፡ ክፍለ ግዝና ከወሊድና ከወሊድ በኋላ ሁኔታዎች ጋር የተያያዘ ጥያቄ

ተ. ቁ	ጥያቄዎች	ዓማራ ጭመል ስኞት	Ski p
20	ዕስካሁን ስንት ጊዜ ወልደዎል (በህይወት የተወለደ፣ ሙቶ የተወለደና ወዲያ ወይም ዕድሜው የተወለደ የሞተ)	_____ ጊዜ	

20	ለመጀመሪያጊዜ ሲያረጋገጡ ዕድሜዎ ስንት ነበር	-----	
2		-ዓመት	
20	በእርግዝና ሽወቅቶች ሞቶሮት ወለደህጻንነት ለረ/ች	1-ዓዎ	
3		2-የለም	
20	አወከሆነበቁጥር ስንት ነው		
4		-----	
20	በእርግዝና ሽወቅቶች በህይወት የተወለዱ ህጻናት ቁጥር ስንት ነበሩ	-----	
5			
20	በዕርግዝና በወሊድ ጊዜ ምን ዓይነት ችግር ጋጥሞት ነበር	1-ወርጃ	
6		2- ህይወት ያለ ወሊድ መወለድ	
		3- የሞተ ወሊድ መወለድ	
		4-ሌላ ካለ ይጠቀስ	

20	ዓኑን ነፍሱ ጡርነዎት	1-ዓዎ 2-ዓይደለም	
7			

ክፍል ሶስት፡ ከእርግዝና እና ወሊድ ጋር የተያያዙ ጥያቄዎች

ከርግዝና፣ ከወሊድ ፊት፣ ከወሊድ በኋላ ለሚከሰቱ ግዴታዎች የጤና ችግሮች የግንዛቤ ቃለ መጠይቅ ማሳሰቢያ -

በተቀመጠው ክፍት ቦታ ላይ የዜጎች (x) ምልክት ያስቀምጡ ሲያስቀምጡ ምንም እሴት የሰጡት ወዲያው ከሆነ ወዲያው የሚለወጡ ክፍት ቦታ ላይ ከማብራሪያ በኋላ ከሆነ ደግሞ በተቀመጠው ክፍት ቦታ ላይ ያስቀምጡ

ተ. ቁ	ጥያቄዎች	አማራጭ መልሶች	ወዲያ ውኑ	ከማብራሪያ በሁዋላ
301	በእርግዝና፣ በወሊድ እና ከወሊድ በኋላ የእናቶችን ህይወት አደጋ ላይ የሚጥሉ ከእርግዝና ጋር	1.አዎ		

	የተያያዙ ድንገተኛ/ያልታሰቡ አደገኛ ምልክቶች አለብላለሽ ታሰቢያለሽ	2.አላስብም 3.አላውቅም		
302	ባንችህሳብ በእርግዝና ወይም ቅሬታ እና ቶችን ሊያጋጥሙ የሚችሉ አደገኛ ግጥሞች/ምልክቶች ምን ድንጋጌዎች ናቸው ?	1.ከማህጸን በዙጠት መፍሰስ 2-የፊትና ዕጅላይ ዕበጠት 3-የዓይን ብጥታ 4-ዓላውቅም 5- ሌላ ካለ----- ---		
303	ዕዝቢ ህዳደገኛ ምልክቶች ለሞት ይዳርጋሉ ብለሽ ታሰቢያለሽ	1.አዎ 2.አላስብም 3.አላውቅም		
304	ባንችህሳብ በምጥ እና በወሊድ ወይም ቅሬታ እና ቶችን ሊያጋጥሙ የሚችሉ አደገኛ ግጥሞች/ምልክቶች ምን ድንጋጌዎች ናቸው ?	1-ከማህጸን በዙጠት መፍሰስ 2- ለረጅም ጊዜ የቆየ ምጥ 3-ማንዘፍዘፍ 4-ዕንግዴል ጅሳይ ወጣ መቆየት 5-ዓላውቅም		
305	ዕዝቢ ህዳደገኛ ምልክቶች ለሞት ይዳርጋሉ ብለሽ ታሰቢያለሽ?	1.አዎ 2.አላስብም 3.አላውቅም		
306	ከወሊድ በኋላ የሚከሰቱ ህዳደገኛ ምልክቶች ምን ድንጋጌዎች ናቸው?	1--ከማህጸን በዙጠት መፍሰስ 2- መጥፎጠረን ያለ ወያኔ ማህጸን ፈሳሽ 3-ከፍተኛ ትኩሳት 4-ዓላውቅም		
307	ዕዝቢ ህዳደገኛ ምልክቶች ለሞት ይዳርጋሉ ብለሽ ታሰቢያለሽ?	1.አዎ 2.አላስብም 3.አላውቅም		
308	ስለ “ወሊድ እቅድ ወይም ዝግጅት” ሰምተሽ ታውቂያለሽ?	1-ዓዎ 2-ዓይደለም		

	መልስዎን አዎንታዊነት ስሙ	1-ከጤና ባለሙያ 2-ከጤና ሚኒስቴር ስር 3-ከፊደላዊ 4-ከቴሌቪዥን 5-ከጎረቤቶቹ 6-ከመጻሕፍትና በራሪው ረቀቀው 7-ሌላ ካለ-----		
309	ለወሊድ የሚያስፈልጉ ዝግጅቶችን ያደርገው ነበር	1-ዓዎ 2-ዓይደለም		
310	መልስዎን አዎንታዊነት ስሙ	1. ለመገንጠያ የሚሆን አማራጭን ቀድሞ መለየት 2. የመውለጃ ቦታን / ጤና ተቀዋምን ቀድሞ መለየት 3. ላልታሰቡት ግሮች መታከሚያ የሚሆን ገንዘብ ቀድሞ ማጠራቀም 4. የማዋለድ እውቅና ያላቸውን ባለሙያዎች ለይቶ ማወቅ 5. በድንገት ሊያጋጥም ለሚችለው ብዙ የማህጸን ውስጥ ደም መፍሰስ የሚሆን ደም ለጋሽ ቀድሞ ማዘጋጀት 6. የገንፎ ስህል ማዘጋጀት 7-የልጅ ልብስ ቀድሞ ማዘጋጀት 8- ሌላ ካለ ይጥቀሱ-----		

ክፍል አራት: የጤና ግልግሎት ዓጠቃ ቀምን በተመለከተ የሚጠየቅ ቃለ መጠይቅ

ተ. ቁ		አማራጭ መልሶች
40 1	ከዚህ በፊት በነበሩት የዕርገዝና ጊዜዎ በቂ የዕርገዝና ምርመራ ዓድርገዳዎን ነበር	1-ዓዎ 2-ዓይደለም
40 2	በዕርገዝና ጊዜ የሚደረግ ምርመራ ያስፈልጋል ብለው ያስባሉ	1-ዓዎ 2-ዓይደለም
40 3	ባሁኑ ዕርገዝና ዎ የቅድመ ወለድ ክትትል ዓድርገዳዎን ነበር	1-ዓዎ 2-ዓይደለም
40 4	በስንተኛው ሳምንት/ወር ክትትል ንዓደረጉ	-----ወር/ሳምንት
40 5	የርገዝና ምርመራ ወንድም ነው ማለት	1-ዶክተር 2-ነርስ 3-ጤና ግድባሪ 4-ልምድ ዓዎላጅ 5-ሌላ ካለ ይጥቀሱ-----
40 6	በመጨረሻ ወር ዕርገዝና ስንት ጊዜ ክትትል ዓደረጉ	1-ዓንድ ጊዜ በላይ 2-ሁለት ጊዜ 3-ሶስት ጊዜ 4-ዓራት ናከዚያ
40 7	ለወለድ በቂ ዝግጅት ማድረግ ያስፈልጋል ብለው ያስባሉ	1-ዓዎ 2-ዓይደለም
40 8	የሚወልዱበትን ቦታ ማቀድ ይጠቅማል ብለው ያስባሉ	1-ዓዎ 2-ዓይደለም
40 9	የትዕንድ ሚወልዱ ዓቅደው ነበር	1-ዓዎ 2-ዓይደለም
41 0	የትኩረት የወለዱት	1-ቤት 2-ጤና ጣቢያ 3-ጤና ኬላ 4-ሆስፒታል 5-ሌላ ካለ ይጥቀሱ-----
41 1	ቤት ወይስ ጥመድ ለድለምን መረጡ (ካንድ በላይ መልስ መስጠት ይቻላል)	1-ከቤተሰቤ ጋር መሆን ስለፈለኩኝ 2-

		<p>ከወለድኩኝ በኋላ በቤት ውስጥ ያለውን ገዢዎች ስለፈለኩ</p> <p>3-ምንም የማያስከፍል ስለሆነ</p> <p>4-የልምድ ዓዋቅ ላይ ስላለ</p> <p>5-ባለቤቱ ሰለተቀበለው</p> <p>6-ከዚህ በፊት ቤት ወላጅ ምንም ችግር ስላልገጠመኝ</p> <p>7-ትራንስፖርት ስለሌለ</p> <p>8-የጤና ተቋሙ በጣም ስለሚርቅ</p> <p>9-ጤና ባለሙያዎቹ ያላቸው ዓቅታ ለብጥሩ ስላልሆነ</p> <p>10-ሴት የጤና ባለሙያ ስለሌለ</p> <p>11-ዓብሮኝ የሚሄድ ቤተሰብ ስለሌለኝ</p> <p>12-ሌላ ካለ ይጥቀሱ-----</p>
41 2	በጤና ተቋም መውለድ ለምን መረጡ	<p>1-ጤና ድርጅቱ ቅርብ ስለሆነ</p> <p>2-የተሻለ ዓገልግሎት ስለሚሰጥ</p> <p>3-ባለፈው በጤና ድርጅት በጥሩ ሁኔታ ስለወለድኩኝ</p> <p>4-የጤና ባለሙያዎቹ ምክር</p> <p>5-ምጣኔ በጣም ስለጠናብኝ</p> <p>6-ባለፈው በቤት ውስጥ ስለወለድኩኝ ችግር ስላልገጠመኝ</p> <p>7-ሌላ ካለ ይጠቀሱ-----</p>
41 3	ባለፈው በምን ዓይነት ሁኔታ ነው የወለዱት	<p>1-በራሴ ምን ጭንቀት ወለድኩ</p> <p>2-በመሳሪያ ቤት ግዢ</p> <p>3-የማህጸን ቀደጥና ተደርጎልኝ</p> <p>4-ዓላስታ ውስጥ</p> <p>5-ሌላ ካለ ይጠቀሱ-----</p>
41 4	ከዚህ በፊት በጤና ተቋም ወልደው ያወቃሉ	1-ዓዎ 2-ዓይደለም
41 5	መልስ ለምን እንደሆነ ስንት ጊዜ በጤና ተቋም ወልደዋል	-----ጊዜ
41 6	በጤና ባለሙያ ፅንዖት ያገዙት ማቀድ ይጠቅማል ብለው ያስባሉ	1-ዓዎ 2-ዓይደለም
41 7	ማንነበር ያዋለደሽ	<p>1-ደክተር</p> <p>2-ጤና ግድባሪ ነኝ</p>

		<p>3-ነርስ</p> <p>4-የልምድግዋላጅ</p> <p>3-ሌላካለ -----</p>
41 8	ህጻኑ ሲወለድ የመጨረሻ ሁኔታ ወይም ገይ መስላል	<p>1-ህይወት ያለው</p> <p>2-በህይወት ህይወት ያለው ተወልዶ ወዲያ ወደ የሞተ</p> <p>3-ሞቶ የተወለደ</p> <p>4-ሌላካለ -----</p>
41 9	ከርግዝናና ወሊድ ጋር ተያይዞ ለሚፈጠር ችግር የሚሆን ገንዘብ ዓቅድ ስለሌለው ጠላት	1-ግዎ 2-ግይደለም
42 0	ድንገት ለሚፈጠሩ ግድግዳዎች ጋሪ ሁኔታዎች መጓጓዣ ግዘጋጅ ተወካይነት	1-ግዎ 2-ግይደለም
42 1	ከሆነ ያዘጋጁት መጓጓዣ ምንነት	<p>1-በዕግር</p> <p>2-በፈረስ/በበቅሎ</p> <p>3-ሰዎች በቃላት ላይ ተሸክመውኝ</p> <p>4-ግመቡ ላይ ስዕል ጠቅሞታል</p> <p>5-ሌላካለ -----</p>
42 2	ከላይ የተጠቀሱት ድንገተኛ ችግሮች በከሰቱ ደም የሚሰጥ ሰው ዓቅድ ወይንበር	1-ግዎ 2-ግይደለም
42 3	ይህንን ማቀድ ጠቃሚነት ስለሌለው ያስባሉ	1-ግዎ 2-ግይደለም
42 4	ባለፈው ሰው ልዩ ከርግዝናና ወሊድ ጋር ተያይዞ ያጋጠሙት ችግር ነበር	1-ግዎ 2-ግይደለም
42 5	መልሶ ግዎ ከሆነ ምን ዓይነት ችግር ነው ያጋጠሞት	<p>1-በዙደም መፍሰስ</p> <p>2-ለረጅም ጊዜ የቆየ ምጥ</p> <p>3-ዕንግዶ ልጅ ሳይወጣ ቆይቷል</p> <p>4-ሽንትና ሰገራ መቆጣጠር ዓቅቶኝ ነበር</p> <p>5-የጽንሱ ግብዓት መጥፋት ያልተስተካከለ ነበር</p> <p>6-ጽንሱ በሁዳ ጠፍቶ ነበር</p> <p>7-የዕንሽጥ ወይን ሁዳ ጠፍቶ ነበር</p> <p>8-ትኩሳትና መጥፎ ሽታ ያለው የማህጸን ፈሳሽ</p> <p>9-ራስን መሳት</p>

		10-ሌላካለ -----
42 6	ለነዚህችግሮችወደጤናተቋምሄደውነበር	1-ዓዎ 2-ዓይደለም
42 7	ከሆነዓብሮሽየሄደውማነው	1-ባለቤቴ 2-የዕድርዓባላት 3-ዘመዶቼ 4-ጤናባለሞያ 5-ሌላካለ-----
42 8	ባለፈውየተወለደውልጅስንተኛልጅነው	1-ዓንደኛ 2-ሁለተኛ 3-ሶስተኛ 4-ዓራተኛ

ስለነበረንቆይታከልብአመሰግናለሁ፡፡

Annex IV: FGDs checklist guide and debriefing form for FGDs

1. What are the major maternal health care problems of the community?
2. What kinds of problems do pregnant mothers have here?
3. How does the community get information about maternal health care?
4. What are the practices of the mother with respect to birth preparedness and complication readiness?
5. What are the main challenges here for BPCR practices?
6. Which signs/symptoms are considered as danger signs during pregnancy, labor and postpartum?

7. Do the mothers seek care on pregnancy and delivery? How and from whom?
8. Who is responsible for making decisions in health seeking in the family?
9. What are the factors influencing selection of delivery place of home/HF?
10. What are the opinions on quality of health care?
11. What are the religions, traditional and cultural practices of the community during pregnancy, labor and immediately after birth?
12. Do the traditional practices hurt the laboring mother?
13. What has been done here to improve mother's health?

DECLARATION SHEET

I, the undersigned, declare declare that this is our original work and has never been presented in this or any other university and that all sources of materials used for the thesis and individuals contributed to it have been fully acknowledged.

Name of Principal Investigator: Abraham Alebie

Signature: _____

Date of submission: _____

This proposal has been submitted for technical review with my approval as university advisor:

Name: Dr. Esubalew Tesfahun

Signature: _____

Date: _____