Birth Preparedness and Complication Readiness among Women who had Given Birth in the last 12 Months, Barak District, Central Ethiopia

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List of Acronyms

ANC	Antenatal Care
AIDS	Acquired Immune Deficiency Syndrome
BP/CR	Birth Preparedness and Complication Readiness
CSA	Central Statistics Authority
EDHS	Ethiopian Demographic Health Survey
JHPIEGO	Johns Hopkins Program for International Education in Gynecology and Obstetrics
HIV	Human Immunodeficiency Syndrome
HEWs	Health Extension Workers
FMOH	Federal Ministry of Health
HH	House Hold
IFHP	Integrated Family Health Program
KDS	Key Danger Sign
LB	Live Birth
MDG	Millennium Development Goal
ODS	Obstetric Danger Signs
SPSS	Statistical Package for Social Science
RGB	Recently Gave Birth
UN	United Nations
UNDP	United Nations Development Program
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Developement
WB	World Bank
WHO	World Health Organization
WRA	Women of Reproductive Age

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Abstract

Background:

Maternal morbidity and mortality could be prevented significantly if women and their families recognize obstetric danger signs and promptly seek health care. Eventhough promotion of birth preparedness and complication readiness is a strategy advocated for reducing maternal morbidity and mortality, yet there is scarcity of information to utilize them in undertaking effective interventions.

Objective*:* This study was conducted to assess the status of birth preparedness and complication readiness practices and associated factors among women who had given birth in the last 12 months.

Method*:* A community based cross sectional study was employed during October 12-18, 2013. A two stage sampling technique was used to select the eligible women and data was collected using pre-tested and structured questionnaire. The collected data were entered using EPI-data version 3.1 and exported to SPSS version 16.0 for analysis. Frequencies, proportion and summary statistics were used to describe the study population in relation to relevant variables. Logistic regression analysis was employed to control the possible confounding effects and to assess the separate effects of the variables.

Result: Out of 447 elligible women, 440 (98%) were successfully interviewed and the mean age of the respondents was 28(±5.4) years. Nearly one out of eight (13%) of the respondents was well- prepared for delivery and emergency obstetric care. Maternal litracy (AOR=8.02, 95%CI: 3.96, 16.25), being primi para (AOR=2.17, 95%CI: 1.06, 4.44), ante natal care visits of four or more times (AOR=2.82, 95%CI: 1.43, 5.58) and knowledge of at least three key danger sign during pregnancy, delivery or postpartum (AOR= 2.95, 95% CI: 1.16, 7.51) were significantly associated with birth preparedness and complication readiness.

Conclusion and recommendation: The prevalence of BP/CR, the knowledge of obstetric danger signs and the proportion of mothers who attend recommended ANC visit were found to be very low.There fore, focused ante natal care service has to be improved so as to to make effective birth preparedness and complication readiness plan.

Key Words: Birth preparedness and complication readiness**, r**ecently gave birth, Barak district

CHAPTER ONE: INTRODUCTION

1.1. Background

Birth preparedness and complication readiness (BP/CR) is the process of planning for normal birth and anticipating the actions needed in case of an emergency [1]. It is defined as an overarching program approach to improve the use and effectiveness of key maternal and newborn health services, based on the premise that preparing for birth and being ready for complications reduces all three phases of delays in receiving these services.The key elements of BP/CR are: saving money for delivery, arrangement for transportation, identifing skilled attendant to assist at birth, identifying a health facility for birth or emergency and identifying blood donor in case of emergency [2].

Evidences indicated that BP/CR reduces delays in deciding to seek care in two ways. First, birth preparedness motivates people to plan to have a skilled provider at every birth. If a woman and her families make the decision to seek health care during pregnancy, the woman will reach health facility before developing any potential complications during childbirth, thus avoiding the first two delays. The second point is that complication readiness raises awareness of danger signs among women, families, and communities, which improves early recognition of problem by reducing the delay in deciding to seek care [2-4].

Maternal morbidly and mortality could be prevented significantly if women and their families recognize obstetric danger signs and promptly seek health care. The presence of skilled attendants at births and availability of emergency obstetric care have been shown to greatly reduce maternal deaths due to obstetric complications. It has been identified as the single most important intervention and global benchmark indicator to monitor progress towards the goal of maternal mortality reduction [5, 6]. World Health Organization (WHO) recommended that Birth preparedness and Complication Readiness (BP/CR) is a strategy aimed at enhancing the utilization of skilled care in low income countries [7, 8].

1.2. Statement of the Problem

Most maternal deaths in resource poor countries such as Ethiopia are the direct result of the three delays namely; delay to make a decision to seek care, delay to reach health facility and delay in receiving adequate and appropriate health care. Failure to make effective birth preparedness and complication readiness plan leads to inadequate response to these delays [2, 3]. For instance, when complications occur, the family which is not prepared will waste a great deal of time in recognizing the problem, organizing themselves, looking for money, finding transport for reaching the appropriate referral facility and these delays can lead to bad obstetric out comes, ending in maternal and neonatal death [4].

Every pregnant woman might face the risk of sudden and unpredictable complications that could result in death or injury to her or to her infant. Most of these complications (75%) are the direct causes for maternal death in developing regions. These are: hemorrhage (25%), sepsis (15%), unsafe abortion (13%), eclampsia (12%), and obstructed labor (8%) [3, 9, 10].

According to the WHO estimate, there were 287,000 maternal deaths in 2010 world wide.Among these, developing countries contributes for 99% of the maternal death and the majority (56%) of the death was in sub-Saharan Africa [11]. Ethiopia carries a high burden of maternal death being one of the six countries (India, Pakistan, Afganistan and Dimocratic Republic of Congo) that contribute to about 50% of the maternal deaths world wide [12].

The Ethiopian Demographic Health survey (EDHS) result of 2011 shows the maternal mortality ratio is estimated to be 676/100,000 live births and only 10% of women assisted by skilled attendants during birth [13]. The country target derived from the Millennium Development Goal five (MDG 5) to reduce maternal mortality ratio to 267/100,000 live births by the year 2015 may not be achieved unless well designed and focused interventions are instituted [14]. Moreover, the report of EDHS also indicated that, delivery conducted by skilled attendants is only 8% in Oromia region which is lower than the national average [13].

The national reproductive health strategy of Ethiopia has given emphasis to maternal and newborn health so as to reduce the high maternal and neonatal mortality. This strategy focuses mainly on empowering women, husbands and communities to recognize pregnancy related complications and to take responsibility for developing and implementing BP/CR practices by promoting knowledge of key danger signs during pregnancy, delivery and after delivery [15].

Despite the effort being made, the awareness of women on key obstetric danger signs and the practice of BP/CR is still very low leading to low utilization of skilled care and high Maternal Mortality Ratio (MMR) . In Ethiopia, previous studies indicated about 22% in Sothern Ethiopia and 17% in Northern Ethiopia were well prepared for BP/CR [16, 17]. The other study in Burkina Faso also indicated about 43.4% planned for a birth provider, 46.1% planned for transportation, and 83.3% planned to save money in the case of an emergency [18].

Regarding the knowledge of key danger signs, according to the study done in Sidama zone of Southern Ethiopia, 30.4%), 41.3% and 37.7% knew at least two danger signs during pregnancy, childbirth and postpartum period, respectively [19].Another study done in rural Tanzania also indicated the percentage of women who knew at least one danger sign during pregnancy was 26%, during delivery 23% and after delivery 40% [20]. Other studies conducted in rural Kenya and Uganda indicated only 6.7% and 19% had knowledge of 3 or more key danger signs respectively during pregnancy, child birth and post partum [21, 22]. However, the current status of BP/CR the factors associated is not well known and this study is designed to fill the gap.

CHAPTER TWO: LITERATURE REVIEW

1.1. Birth preparedness and complication readiness

Birth Preparedness and Complication Readiness (BP/CR) is the best strategy to promote the timely use of skilled maternal and neonatal care with the assumption that "every pregnancy faces risks" [8]. With this assumption, any pregnant women should be made aware of any obstetric danger signs during pregnancy, delivery and the postpartum that ultimately empower them and their families to make necessary BP/CR practices and take decisions to seek care from skilled birth attendants [20].

In most parts of India, childbirth is perceived as a normal event. This is because of low awareness of women about obstetric emergencies and there fore advance household preparation for potential obstetric emergencies or preparedness for birth is not common [23]. A cross-sectional survey which was conducted to measure the impact of birth-preparedness and complication readiness in Burkinafaso shows that among recently delivered women, only 43.4% planned for a place of birth and 46.1% planned for transportation [18]. In another study conducted in Kenya, 10.9% of the respondents did not have a clear plan of what to do in case of an obstetric emergency. A significant 44.9% of the respondents had not made prior transport arrangements to get to hospital in case of an emergency while 37.1% had not set aside funds for emergency purposes [21].

In a community based study conducted in Aleta Wondo district of southern Ethiopia, only 20.5% of pregnant women identified skilled provider, 8.1% identified health facility for delivery and/or for obstetric emergencies, 7.7% prepared transportation and 34.5% saved money for incurred costs of delivery and emergency if needed. Only few (2.3%) identified potential blood donor in case of emergency. By taking women who took at least two steps of elements of birth preparedness as well prepared, this study revealed that only 17% of pregnant women were considered well prepared for birth and complication [16]. In another study conducted in Adigrat district of Tigray region, Northern Ethiopia, 45.6% reported that they identified place of delivery, 41.5% saved money and 3.7% identified a mode of transportation. Overall one hundred eighteen (22.1%) of the respondents were birth prepared [17].

1.2. Factors associated with birth preparedness

1.2.1. Mothers knowledge of danger signs during pregnancy, delivery and posportum period

Knowledge of the danger signs of obstetric complications is the essential first step in the appropriate and timely referral to essential obstetric care. As stated by maternal and neonatal health program of JHPIEGO in monitoring birth preparedness and complication readiness, the potential obstetric danger signs during the three key periods of maternal death are the following: The key danger signs during pregnancy include: Severe vaginal bleeding, swollen hands/face, blurred vision.The key danger signs during labor and childbirth: Severe vaginal bleeding, Prolonged labor (more than 12 hours), Retained placenta and Convulsions.The key danger signs during the postpartum are: Severe vaginal bleeding, high grade fever and foul-smelling vaginal discharge [2].

Different studies conducted in developing countries indicated that women's knowledge of life-threatening obstetric complications is very low that they are subjected to death. Although convulsions and excessive bleeding account for more than half of all maternal deaths in Bangladesh, only 26% and 18% of women were aware of these complications respectively [24]. Other studies conducted in rural Kenya and Uganda indicated only 6.7% and 19% had knowledge of 3 or more key danger signs respectively during pregnancy, child birth and post partum [21, 22].

On the other hand, according to a community based study conducted in Adigrat; Northern Ethiopia; the knowledge level of obstetric complication among women who recently gave birth is extremely low. The study result indicated that out of 534 women included in the study; only eighty eight (16.5%), 3(0.6%), 59(11%) and 38(7.1%) of the respondents mentioned severe vaginal bleeding, convulsions, prolonged labor and retained placenta as danger signs during labor/childbirth respectively [17].

Studies conducted in different developing countries identified association between knowledge of danger signs and birth preparedness. In India, compared to the less-prepared mothers, the well-prepared mothers had better knowledge about maternal danger signs How ever, this was not

statistically significant [AOR=1.5 (0.8-2.8)] [25]. In Uganda, the relationship between knowledge of at least one key danger sign during pregnancy or during postpartum and birth preparedness showed statistical significance which persisted after adjusting for probable confounders (OR 1.8,95% CI: 1.2-2.6) and (OR 1.9, 95% CI: 1.2-3.0) respectively [22].

1.2.2. Socio- demographic factors

Among the socio demographic factors, higher maternal age, maternal education, higher household economic resources, women`s autonomy and occupational status are factors that are related to BP/CR. Ethnicity and religion are often considered as markers of cultural background and are thought to influence beliefs, norms and values in relation to childbirth and service use and women's status [26].

In India, litrate mothers [AOR=1.9, (1.1-3.4)] and had litrate husband [COR=1.6(1.03, 2.6)] were more likely to be prepared than their counter parts.However, husband litracy status was not significant when it was adjusted with multiple regression model [25]. In Uganda, women who were from households that had high assets ownership score were more likely to be birth prepared than those with lower household assets ownership score, though this relationship was not statistically significant (AOR 1.5, 95% CI: 1.0-2.3). [22].

The study conducted in Nigeria indicated that, when planning to save money for childbirth was regressed on educational level, marital status, awareness of birth preparedness and parity; parity was observed to be highly significant predictor of planning to save money followed by awareness of birth preparedness ($P<0.05$). But, marital status and level of education were not good predictors. [28].

Similarly, some studies conducted in Northern part of Ethiopia showed marital status was among the socio-demographic factors which were significantly associated with birth preparedness [AOR=6.14(1.77, 21.35)]. Married women were 6 times more likely to be prepared than non-married The same study also showed that literate mothers were more likely to be birth prepared than illiterate [(AOR= 2.25, 95% CI= 1.31, 3.88)] [17].

The study conducted in India showed that those mothers who had ANC service are almost two times more likely to be birth prepared as compared to those who had no ANC service [AOR= (1.7 91.05, 2.8)] and in Southern Ethiopia, those mothers who had ANC service are two times more likely to be, birth prepared as compared to those who had no ANC service (AOR = 1.91 95% CI; 1.21–3.01) [25,16] .

In the study finding of Ethiopia, number of ANC visit is also significantly associated with BP/CR. Those mothers who attend ANC four or more times are more likely to be prepared as compared to their counter parts. Similarly, advice given on birth-preparedness during ANC follow up was also significantly associated with BP/CR **[AOR=2.62(1.64, 4.18)]** [17]. Parity is another factor affecting BP/CR. Low parity is significantly associated to BP/CR. [26]

Having prevous history of still birth was also associated with BPCR [AOR= 4.29(1.61,11.39)]. History of still birth can make women aware of the danger signs of childbirth and the benefits of skilled interventions and thus make them prepared for subsequent deliveries [26]. According to the study done in Southern Ethiopia, history of still birth was among the obstetric factors significantly associated with BP/CR; women who had history of still birth were more likely to be prepared for birth than those who did not have still birth. In addition, the study result shows that women with first pregnancy were more prepared than their counter parts [16].

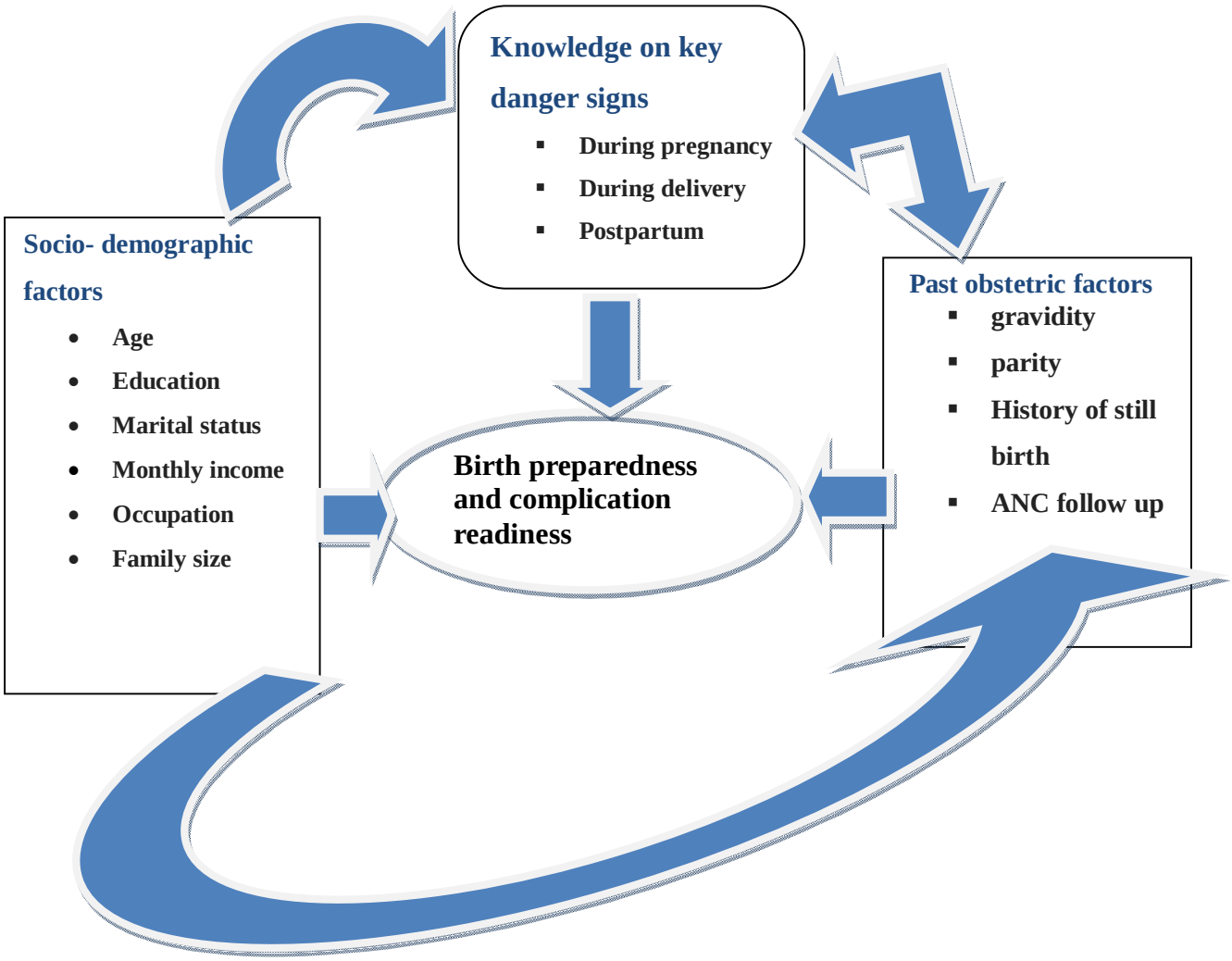

Figure 1: Conceptual framework on factors related with BP/CR practices

(Adapted from Jhpiego monitoring of BP/CR) [2]

Significance of the study

The Ethiopian government has come up with a Road Map for Accelerating the Reduction of Maternal and Neonatal Mortality and Morbidity so as to achieve MDGs by the year 2015 through promoting BP/CR.Therefore, evidence based intervention is crucial and Studies exploring the BP/CR practices and associated factors with their practices are needed in reduction of the current high MMR.

Eventhough promotion of birth preparedness and complication readiness is a strategy advocated for reducing maternal morbidity and mortality, yet there is scarcity of information to utilize them in undertaking effective interventions.

This study was therefoe designed to fill this gap by assessing practices and associated factors with regard to BP/CR so as to provide health planners and other concerned bodies with evidence-based information which may be used to design appropriate interventions and as a base for further wider scale studies in other part of the country.

CHAPTER FOUR: OBJECTIVE

General objective:

To assess the status of birth preparedness and complication readiness practices and associated factors among women who had given birth in the last 12 months in Barak District

Specific objectives:

- To determine status of birth preparedness and complication readiness practices among women who had given birth in the last 12 months in Barak district

- To determine knowledge of obstetric danger signs among women who gave birth in the last 12 months in Barak district.

- To identify socio-demographic factors associated with the practices of birth preparedness and complication readiness among women who had given birth in the last 12 months in Barak district

- To identify obstetric factors associated with the practices of birth preparedness and complication readiness among women who had given birth in the last 12 months in Barak district

CHAPTER FOUR: METHOD AND MATERIALS

4.1. Study Area and the study period

This study was conducted in Barak District which is one of the six Districts in Finfine Special zone, Oromia regional state, Central part of Ethiopia found 30 km away from Addis Ababa on the way to Debre Birhan. Administratively, the District is subdivided into 22 rural kebeles. The total projected population of the District according to 2007 Ethiopian census report is estimated to be 82,078 and the estimated number of women who gave birth in 2012/13 is 3283 [29, 30]. The District has 3 health centers and 19 satelite health Posts which makes the potential health service coverage of 90%. The total number of health workers is 36; out of which 5 are midwives, 2 health officers and the rest 29 are nurses, laboratory technicians and pharmacy technicians. There are 41 health extension workers working in the District [31]. The study period was during October 12-18, 2013.

4.2. Study design

A community based cross-sectional study design was employed.

4.3. Population:

Source population:

All women who had given birth in the last 12 months in Barak District of Finfine Special Zone

Study Population:

A sample of women who had given birth in the last 12 months from the source population

Inclusion and exclusion criterias

Inclusion criteria:

- Women who gave birth within the last 12 months

Exclusion criteria:

Women, who were critically ill, could not talk or listen at the time of the interview

Sample *size determination*

Sample size was determined by using sample size formula for estimating a single population proportion with the assumption that the prevalence of BP/CR from previous study [16], margin of error and confidence level of 17%, 5% and 95% respectively.

Sample size: $n = P\ (1\text{-}P)\ (Z\alpha_{/2})^2 /d^2$

Where: P is prevalence of BP/CR =17%,

$Z\alpha_{/2}$ is the significance level = 1.96

d is the margin of error =0.05

Sample size = $0.17(0.83)*(1.96)^2/ (0.05)^2$ =203

Considering the design effect of 2 and 10% non-response rate [16], the total sample size was 447.

4.4. Sampling technique

A two-stage sampling technique was used to select the study participants. First, out of 22 kebeles, a total of six were randomly selected. Next, 770 women who delivered within the previous 12 months and found in the selected six kebeles were registered and sampling frame was prepared. The calculated sample size was proportionally allocated to the selected kebeles based on the number of mothers registered. Then, study subjects were randomly selected from the sampling frame.

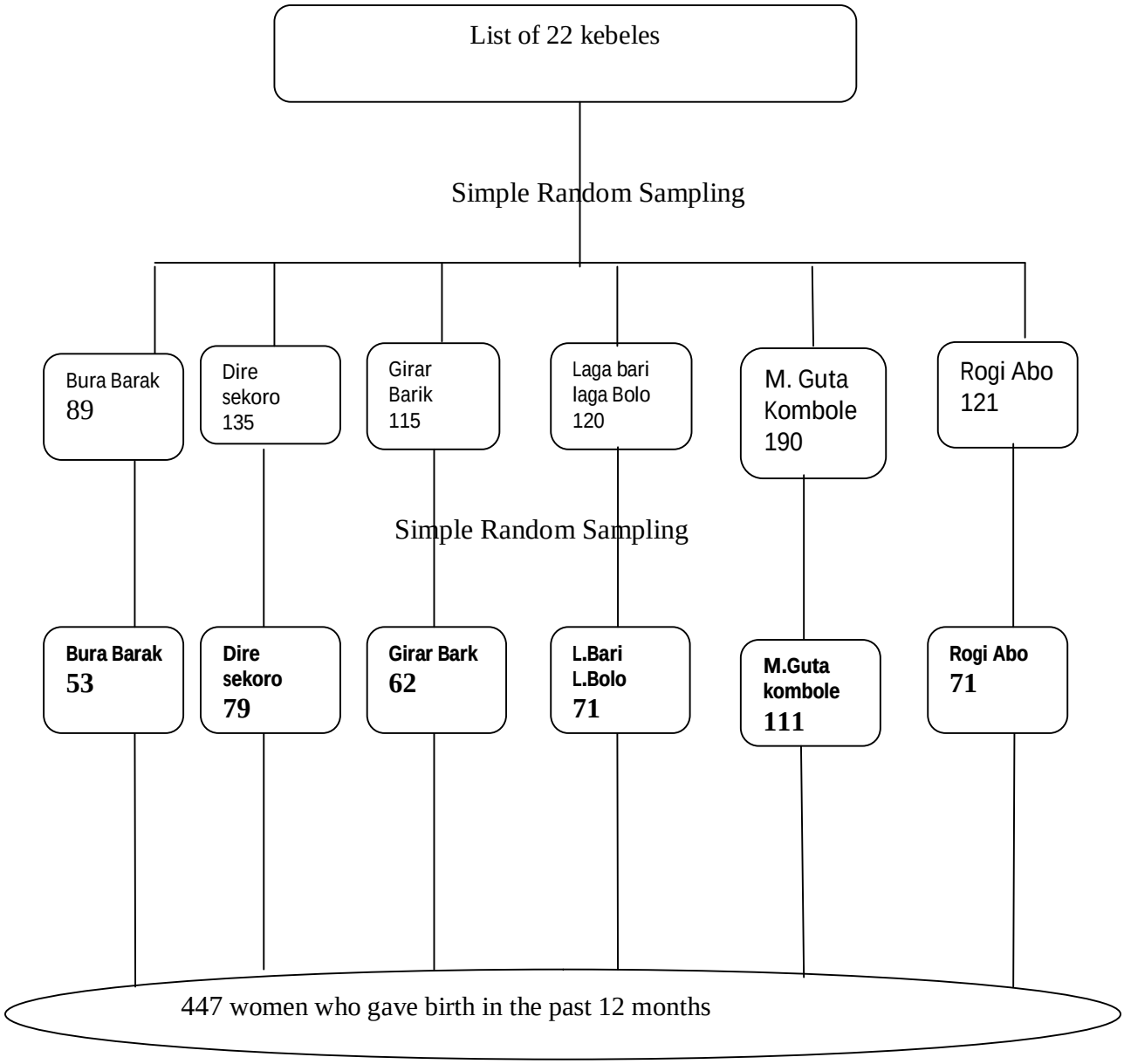

Figure 2: Schematic presentation of sampling procedure

4.5. Study Variables

Dependent Variable:

- Birth preparedness and complication readiness practice

Independent Variables:

- Socio-demographic factors of the study subject:

  (Age, Education, Marital status, Monthly income, Occupation, Family size, Religion, Ethinicity)

  - Husband's socio-demographic characterstics:

    (Age, Occupation, Education)

- knowledge about key danger signs during pregnancy, delivery and post partum
- Past obstetric factors: gravidity, parity, still birth, ANC follow up

4.6. Data Collection procedures

A structured questionnaire mainly adapted from a safe motherhood questionnaire developed by Maternal Neonatal Program of JHPIEGO, an affiliate of John Hopkins University [2] was developed in English in such a way that it includes all the relevant variables to meet the objectives. It consists of sections namely; socio-demographic information, past obstetric factors, Knowledge of obstetric danger signs, Experience related to last pregnancy, child birth and postpartum. An individual who has very good knowledge of both English and Afan Oromo languages translated the English version to Afan Oromo for better understanding of the enumerators and respondents. Another individual of similar ability then translated the Afan Oromo version back to English to check for its consistency.

Twelve health extension workers and two BSc Nurses were recruited and used as data collectors and supervisor respectively after being trained on the prepared data collection tool. During data collection, if the woman refuses to participate, then she was considered as non response. If the home in which the eligible woman was closed on the day of the data collection, then the data collector re-visited by giving appointment through the neighbor and if they couldn't find the

woman on 2nd visit, then they again appointed for the last time and visited at the time convenient to the mother. Finally, if they fail to get on 3rd time, it was taken as non response.

4.7. Operational definitions

Birth preparedness and complication readiness: Basic arrangements that pregnant women make for birth and or emergency conditions namely: saving money for delivery, arrangement for transportation, identifining skilled provider to assist at birth, identifying a health facility for emergency and identifying blood donor in case of emergency [2].

Identified place of delivery: a place for delivery planned a head of childbirth reported by the woman.

Saved money: any money put aside by the woman or her family for childbirth

Identified mode of transport: any kind of transport which is identified ahead by the women or her family for the purpose of transportation to place of childbirth or for the time of obstetric emergencies reported by the woman

Skilled provider- Persons with midwifery skills (physicians, health officers, nurses/midwives) who can manage normal deliveries and diagnose, manage or refer obstetric complications.

Knowledge of obstetric complication(s): awareness of any symptom of obstetric complication(s) reported by a woman that may occur during pregnancy, delivery or within 6 weeks after delivery [2]

Well prepared: a woman was considered as well prepared if she identified place of delivery, saved money and identified a mode of transport ahead of childbirth [19].

Recently gave birth: Women who gave birth within the last 12 months [2].

Litrate: Those respondents who attended formal education

Illitrate: those respondents who did not attend formal education

4.8. Data entry and analysis

The collected data were entered using EPI-data version 3.1 and exported to SPSS version 16.0 for analysis. The data were edited and cleaned before analysis. Frequencies, proportion and summary statistics were used to describe the study population in relation to relevant variables. Multiple logistic regression analysis was employed to control the possible confounding effects and to assess the separate effects of the variables.Variables with $p<0.25$ were selected as candidate variables & entered to the multivariate analysis model to select the potential factors. A p-value < 0.05 was considered to declare statistical significance

4.9. Data Quality Assurance

To ensure the quality of data, a practical based training was given for two days to the data collectors and supervisors on objective of the study and data collection procedures based on the training manual prepared by the principal investigator. Prior to the main fieldwork, data collection tools were pre-tested in other kebele not included in the study and necessary adjustment was made after the pre test. During the data collection, each data collector checked the questionnaires for completeness before leaving each study participant. Close supervision was made by two supervisors and the principal investigator.

Each questionnaire has been reviewed daily by supervisors and the principal investigator to check for completeness, consistency and clarity. After data collection, the data were coded and entered to computers using Epi data to minimize errors. Data cleaning and editing was done before analysis to ensure quality.

4.10. Ethical Consideration

Ethical approval and clearance was obtained from the ethical review committee of the Jimma University, Public Health and Medical Sciences College. Formal support letter was obtained from Oromia Regional Health Bureau, Finfine Special Zonal Health Office, and Barak District Health Office and from each local kebeles administrations.

During data collection informed verbal consent was obtained from the study participants. Each respondent was informed about the objective of the study, procedures of the selection and interview, possible risks and benefits and assurance of confidentiality. The participants were told that participation is purely voluntary, and the right of not responding to all or part of the questions was respected. Confidentiality and privacy was maintained by recruiting and training female data collectors and conducting interviews in separate space in their living compound. Besides, respondents' names were not recorded.

4.11. Dissemination of Findings

The finding from this study will be presented to Jimma University, Public Health and Medical Sciences College. Moreover, copies will be submitted to FMoH, Oromia Regional Health Bureau, Finfine Special Zonal Health Department and Barak District Health Office.The findings also will be presented in various Seminars/workshops and may also be published in a scientific journal.

CHAPTER FIVE: RESULT

Socio-demographic characterstics

Out of 447 eligible women in this study, 440 (98.0%) were successfully interviewed and the rest were not found for an interview after three repeated visits.The mean age of the respondents was 28(±SD 5.4) years. The majority [416 (95.0%)] of the respondents were in marital union during the last pregnancy, [427(97.0%)] belong to Oromo ethnic group, [402(91.0%)] Orthodox Christian religion, [401(91.0%)] were housewives and [347(78.0%)] did not attend formal education (Table 1).

The mean age of the husband were 34(±SD 6.6) years. The majority of the husband 353(83.6%) were farmers and the rest 30(6.8%), 29(6.6%) and 10(2.3%) were private business, private employee and government employee respectively. More than two third of the husbands 334(79.5%) did not attend formal education and only 86(20.5%) attend formal education.

Table 1:Socio-demographic characteristics of the respondents, Barak district, October 2013

Variables	Number	%
Age of the mother		
<20	37	8.4
20-25	116	26.4
26-30	167	38.0
31-35	75	17.0
>35	45	10.2
Total	440	100.0
Marital status		
Married	416	95.0
Not married	24	5.0
Total	440	100.0
Religion		
Orthodox	402	91.4
Islam	31	7.0
Protestant	7	1.6
Total	440	100.0
Ethnicity		
Oromo	427	97.0
Amhara	12	2.7
Gurage	1	0.2
Total	440	100.0
Occupation		
House wife	401	91.1
Private employee	21	4.8
Merchant	11	2.5
Government employee	7	1.6
Total	440	100.0
Educational status		
Illiterate	302.0	68.6
Readand write	45.0	10.2
Primary	84.0	19.1
secondary+1	4.0	0.9
Diploma and above	5.0	1.1
Total	440.0	100.0

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Past obstetric characteristics

About one quarter [122(27.7%)] of the respondents had history of pregnancy only one time and [129(29.3%)] of them gave birth for the first time. The number of respondents with history of still birth is [44 (10.0%)]. Three hundred forty six (79.0%) of the respondents have attended ANC, while only [139(31.6%)] had four or more ANC visits. Out of those respondents who received ANC, only [80(18.0%)] were advised by ANC service providers on key obstetric danger signs and to plan on the basic BPCR elements (Table 2).

Table 2: Obstetric characteristics of the respondents, Barak district,October 2013

Variables	number	%
Gravidity		
1	122	27.7
2-4	236	53.6
>4	82	18.6
Total	440	100.0
Parity		
1	129	29.3
2-4	234	53.2
>4	77	17.5
Total	440	100.0
History of still birth		
yes	44	10
no	396	90
Total	440	100
ANC Visits		
Zero visit	94	21.4
1-3 visits	207	47.0
four or more visits	139	31.6
Total	440	100

Knowledge of danger signs during pregnancy, delivery and postpartum

A few of the respondents mentioned severe vaginal bleeding [67(15.0%)], blurred vision [39(9.0%)] and swollen hands/face [34(8.0%)] as danger signs during pregnancy. In addition,[135(31.0%)], [76(17.0%)], [40(9.0%)] and [38(8.9%)] of the respondents reported labor lasting more than 12 hour, retained placenta, severe vaginal bleeding and convulsion, respectively as the danger signs that may happen during delivery. An insignificant number of the respondents expressed high fever [62(14.0%)], severe vaginal bleeding [50(11.0%)] and foul smelling vaginal discharge [4(1.0%)] as danger signs during the postpartum period (Table 3).

Only few respondents were able to mention at least one key danger sign in the following phases; during pregnancy [98(22.8%)], childbirth [155(35.0%)] and postpartum [101(23.0%)]. However when the scores were combined for the three periods only [30(6.8%)] could mention at least 3 key danger signs in all the three periods(Table 3)

Table3: Proportion of women who reported knowledge of key danger sign during pregnancy,
child birth & post partum

Key danger signs		Yes	%
Knowledge of key danger signs during pregnancy			
	yes	67	15.2
	no	373	84.8
Severe vaginal bleeding	total	440	100.0
	yes	39	8.9
	no	401	91.1
Blurred vision	total	440	100.0
	yes	34	7.7
	no	406	92.3
Swollen hands/face	total	440	100.0
Knowledge of key danger signs during delivery			
	yes	135	30.7
	no	305	69.3
Labour lasting more than 12 hrs	total	440	100.0
Retained placenta	yes	76	17.3

	no	364	82.7
	total	440	100.0
	yes	40	9.1
	no	400	90.9
Severe vaginal bleeding	total	440	100.0
	yes	38	8.6
	no	402	91.4
Convulsions	total	440	100.0
Knowledge of key danger signs during post partum			
	yes	62	14.1
	no	378	85.9
High fever	total	440	100.0
	yes	50	11.4
	no	390	88.6
Severe vaginal bleeding	total	440	100.0
	yes	4	0.9
	no	436	99.1
Foul smelling vaginal discharge	total	440	100.0
Knowedge of at least one key danger sign			
	yes	98	22.3
	no	342	77.7
Knows at least one KDS during pregnancy	total	440	100.0
	yes	155	35.2
	no	285	64.8
Knows at least one KDS during delivery	total	440	100.0
	yes	101	23.0
	no	339	77.0
Knows at least one KDS during post partum	total	440	100.0
	yes	30	6.8
	no	410	93.2
Knows at least three KDS at all the three periods	total	440	100.0

Birth preparedness and complication readiness practices

Of the five birth preparedness and complication readiness practices considered in this study; those who identified health facility for emergency and or delivery were 83(18.9%), those who identified transport were124(28.2%), saved money for incurred costs of delivery and emergency if needed were 79(18.0%) and only 10(2.3%) identified health personnel. None of them identified potential blood donor. When the steps taken is considered, 308(70.0%) didn`t take any BP/CR steps and very few 58 (13.2%) took at least 3 basic steps (identified place of delivery, saved money and identified a mode of transport) (Table 4).

Table 3: Birth preparedness and complication readiness practices, Barak district, October 2013

Level of BPCR	Number	Percent
Identify health facility for emergency & or delivery	83	18.9
Identified Transport	124	28.2
saved money	79	18.0
identified blood donor	0	0.0
identified health personnel	10	2.3
Number of steps taken		
0	308	70.0
1	33	7.5
2	41	9.3
3	52	11.8
4	6	1.4
Total	440	100.0
Well birth prepared(took 3 or more steps)	58	13.2

About three quarter [325(74%)] of the respondents gave their recent birth at home. The main reasons for delivering at home were; no problem encountered and therefore no need to go to health institution [254(78%)], lack of transport [30(9%)], no good service at health facility [23(7%)], lack of money [14(4%)] and [4(1%)] replied family refused. When mothers who delivered at health institution were asked for the one who made the final decision to deliver at health institution, [65(56%)] replied both the respondent and her husband made the decision. This indicates the importance of involving male in making BP/CR plan

Among all the respondents, [42(9.5%)] experienced complication during delivery and [36(85.7%)] sought medical care. Out of these, 13 respondents were well prepared for BPCR and all of them sought assistance from health personnel. While the rest 29 who developed obstetric complication during delivery were less prepared and only [23 (79%)] of them sought assistance from health workers. The main reason mentioned by the respondents who did not seek assistance for the obstetric complications was they did not know that going to health facility was necessary (67%).

Factors associated with BP/CR

The bi variate analysis indicated that maternal literacy [COR=13.79 (7.36,25.83)], had a literate husband [COR=3.22(1.77,5.83), primi para [COR=6.07(3.36,10.96)], have history of still birth [COR=7.48(2.68,20.81)], attended antenatal care visits four or more times [COR=4.84(2.70,8.65)], and had better knowledge about danger-signs of [COR 6.20(2.83,13.60)] were significantly associated with BP/CR. The other socio demographic variables like age, marital status, occupation, religion, ethnicity and income were not significantly associated with BP/CR.

However, the adjusted multivariate model showed that significant predictors for being well-prepared were maternal literacy , being primi para , antenatal care visits of four or more times and women with knowledge of at least three key danger sign at all the three periods that is during pregnancy, delivery or during postpartum.

Literate mothers were eight times more likely to be well prepared as compared to illiterate onse [(AOR=8.02, 95%CI: 3.96, 16.25)]. As well, women who delivered for the first time (primi para) were two times more likely to be well prepared than their counterparts [(AOR=2.17, 95%CI: 1.06, 4.44)]. Those mothers who attended ANC four or more times were three times more likely to be well prepared as compared to their counter parts [(AOR=2.82, 95%CI: 1.43,5.58)] and also those mothers who know at least three key danger signs at all the three periods were found to be three times more likely to be well prepared as compared to their counter parts [(AOR= 2.95, 95% CI: 1.16, 7.51)] (Table 5).

Table 4: Association between socio-demographic, reproductive characteristics, knowledge of key danger signs and birth preparedness and complication readiness, Barak district, October 2013

Variables	well prepared (n=58)		Less prepared (n=382)		Crude OR[95%CI]	Adjusted OR[95%CI]
	n	%	n	%		
Age of the mother						
<20	1	1.7	36	9.4	0.12[0.01.1.08]	
20-25	21	36.2	95	24.9	1.02[0.41,2.51]	
26-30	16	27.6	151	39.5	0.49[0.19,1.23]	
31-35	12	20.7	63	16.5	0.88[0.33,2.35]	
>35	8	13.8	37	9.7	1.00	
Occupation						
House wife	42	72.4	359	94.0	0.31[0.08,1.22]	
Gvt employee	5	8.6	2	0.5	6.66[0.80,54.95]	
Private employee	8	13.8	13	3.4	1.61[0.33,8.08[	
Merchant	3	5.2	8	2.1	1.00	
Income						
<500	9	15.5	63	16.5	0.83[0.34,2.01]	
501-1500	33	56.9	224	58.6	0.86[0.45,1.65]	
>1500	16	27.6	94	24.6	1.00	
Litracy						
litrate	40	69.0	53	13.9	13.79[7.36,25.83]*	8.02[3.96,16.25]**
illitrate	18	31.0	329	86.1	1.00	
Husband educational status						
litrate husband	23	40.4	63.0	17.4	3.22[1.77,5.83]*	
illitrate husband	34	59.6	300.0	82.6	1.00	
Parity						
primi para	38	65.5	91	23.8	6.07[3.36,10.96]*	2.17[1.06,4.44]**
multi para	20	34.5	291	76.2	1.00	
History of still birth						
Yes	8	13.8	8	2.1	7.48[2.68,20.81]*	
No	50	86.2	374	97.9	1.00	
Number of ANC visit						
4 or more visits	37	63.8	102	26.7	4.84[2.70,8.65*	2.82[1.43,5.58]**
<4 visits	21	36.2	280	73.3	1.00	
Knoledge of KDS						
Aware of at least 3KDS	13	22.4	17	4.5	6.20[2.83,13.60] *	2.95[1.16,7.51]**
not aware of at least 3KDS	45	77.6	365	95.5	1.00	

CI = Confidence Interval, OR = Odds ratio, Aware of at least 3KDS= Aware of at least three key danger signs during the three periods namely pregnancy, delivery and Post partum.*=P<0.05, **= predictor variables in the final model with p<00.05

CHAPTER SIX: DISCUSSION

The overall prevalence of birth preparedness and complication readiness estimated in this study is found to be 13% which is lower than the study done in southern Ethiopia (17%) and higher than what was reported from Kenya 7% [20, 22]. This finding is also very low as compared to the study done in India (47%) [25]. This might be due to sub-standard counseling offered by health care professionals and health extension workers on BP/CR.

Maternal literacy was one of the predictor for BP/CR; literate mothers were eight times more likely to be well prepared as compared to illiterate onse. This may be because literate woman (who attended formal education) is able to better understand the health messages acquired from various sources and make informed decisions about her own health and also could decide on here asset compared to her counterpart.. This finding is supported by different studies done in different areas. According to the study done in Northern Ethiopia, India and Uganda, compared to the less-prepared mothers, the well prepared mothers tended to be literate [11,24,25].

Women who delivered for the first time (primi para) were two times more likely to be well prepared than their counterparts. This could be due to high risk perception of such women than those who had birth experience. Similar study conducted in southern Ethiopia indicated that there is significant relationship between birth preparedness and being primi para [20]. This shows that increasing risk perception might help in improving BP/CR.

The number of ANC vist was found to be significantly associated with BP/CR. Those mothers who attended ANC four or more times were three times more likely to be well prepared as compared to their counter parts. This finding is similar with the study done in Northern Ethiopia [10].The reason could be as the mothers visit the HF, they more understand and aquire better knowledge on BP/CR from the advice given by health workers.

A minimum of four ANC visits is currently recommended by the WHO. Evidence has shown that women who receive 4 ANC visits with effective interventions are as likely to have good outcomes. However, this finding indicated that only [139(31.6%)] have attended the recommended four or more visits.This is much below the study result in Adgrat town of Northern Ethiopia (73%) [10]. The difference may be because the study was done on urban setting where mothers have more access to health facilities and to senior professionals than HEWs. .Therefore, focused ANC service has to be provided as recommended by WHO.

There is also a clear association between knowledge of key danger signs during pregnancy, delivery or during the postpartum period with BP/CR. Those mothers who know at least three key danger signs at all the three periods were found to be three times more likely to be well prepared as compared to their counter parts. This is similar with the study conducted in Tanzania, women who knew ≥3 obstetric danger signs were 3 times more likely to be prepared for birth and complications [26]. This could be because knowledge of the danger signs of obstetric complications enable the mothers to be aware of the the risks related to pregnancy and or child birth and the need to plan to utilize health service at birth or during emergency.

The prevalence of knowledge about key obstetric danger sign was also found to be very low (6.8%). This finding is similar to the study among Kenyan women that reported 6.9% of them could mention three or more danger signs in the three periods [22]. This extremely low finding may be due to deficiencies in the counseling of pregnancy danger signs by health workers or health extension workers during ANC.

STRENGTH AND LIMITATIONS OF THE STUDY

Strengths

The strength of the study includes it is a community based and probability sampling technique was used to select study subjects. The study was done on women who recently gave birth who can actually express their experience and able to provide actual practice unlike that of pregnant mothers who has an intention but not yet not practiced the BP/CR plan. Recall bias is also minimized since it focused on births in the last 12 months preceding the study.

7.2. Limitations

The limitation of this study is that there may be still the problem of recall bias. Recall bias was minimized since it focused on births in the last 12 months preceding the study than selecting mothers who gave birth in the last 2years [2]. There could be social desirability bias as one of the two data collectors is health extension workers in the kebeles. However, great effort has been made to minimize it during the training and data collection period.

CHAPTER SEVEN: CONCLUSION AND RECOMENDATIONS

7.1. Conclusion

This study indicated the prevalence of BP/CR is extremely low. Maternal literacy, being primi para, knowledge of at least three key obstetric danger signs at all the three periods were predictors of birth preparedness and complication readiness. The higher proportion of illiterate mothers, the lower level of awareness on obstetric danger signs and the lower number of ANC visit below WHO recommendation affected the prevalence of BP/CR

7.2. Recomendation

- The Federal ministry of health, Regional health bureau, Zonal health department, Woreda health office as well as other partner organizations that are working in areas of maternal health should enhance the the counseling capacity of the health workers on birth preparedness and complication readiness through on the job training.

- The health facilities has to ensure that every pregnant mothers attended recommended ANC visit and aware of key obstetric danger signs to make basic BP/CR plan

- The involvement of husbands in making necessary preparedness and decision to utilize care is also crucial and has to get focus in promoting BP/CR is crucial. So the health care providers have to involve male partners during counseling on BP/CR.

- Ministry of education has to promote universal coverage of education especially for girls.

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Annex I. Informed consent form

Jimma University

Public Health and Medical science collage
Department of Epidemiology

Good morning/afternoon/evening. My name is _____(Interviewer).I temporarily represent Jimma University. I would like to inform you that we would have a short discussion concerning this study. Before we go to our discussion, I request you to listen carefully to what I am going to read to you.

We are conducting health research on assessment of birth preparedness and complication readiness practice among women who had given birth in the last 12 months.The information obtained from this study is beneficial to identify areas of improvement in the birth preparedness and complication readiness and this could help to improve the health needs of women and newborn and could reduce the morbidity and mortality related to pregnancy, labor and postpartum.

I would like to confirm you that you have the right to stop the interview at any time or skip any question that you do not wish to answer. Taking part in this survey is voluntary and your responses will be held confidencially. Your privacy will also be protected and it will not affect the services you receive at the health facility now or in the future I would like to ask you a few questions if I may, but you can refuse to answer any question I ask. You may end the interview at any time. The interview will last approximately 40 minutes. Thank you for listening to me.

Are you voluntary to respond to the questions?

Result code: 1. YES_____ 2. No_____

If yes, proceed with the interview; if no, thank her and end.

Investigator`s address: Emiru Gebisa e –mail: emirugebisa@yahoo.com ,Mobile No: 0912447730 (Jimma University, Public Health and Medical science collage, Department of Epidemiology)

Name of interviewer who sought the consent: _____Date Signature: _____

Annex II. English version questionnaires

Identification Information

001. Code No. _____
002. Kebele _____House no. _____

Section 1: Socio-demographic Information

First, I would like to ask you some questions about yourself and your husband if any

Q.#	Question	Codes	Go to Q
101	How old are you now? (in completed years and approximate to nearest number if with fraction of months)	_____	
102	What is your marital status now?	Single…….1 Married……... ……....2 Widowed ……...3 Divorced ……...4	
103	What is your religion?	Orthodox…….. …….1 Islam ……..……...2 Protestant ……..…….3 Others (Specify) _____97	
104	What is your ethnicity?	Oromo ……..…....…1 Amhara ……. 2 Others (Specify_____97	
105	What is your occupation?	Housewife ……..…… 1 Government employee …..... 2 Private employee ……. 3 Private business.…….. 4 Other (Specify)_____ 97	
106	What is your educational status?	Illiterate..…….. 1 Read and write only ……..... 2 Primary(G1-8)……...……. 3 Secondary +1……..…….. 4 Diploma and above ……...5	
107	How much is your family monthly income (in Eth. Birr)	_____	
108	How many is your number of family that lives with you?	_____	

Question no.109 – 111 will be asked if the answer for question no.102 is married

109	Husband's age in completed years	_____	
110	Husband's occupation	Farmer ……..……1 Govt. employee ……2 Private employee…..…… 3 Private business.……4 Other (Specify) _____97	
111	Husband's educational status	Illiterate..…….. 1 Read and write only ……..... 2 Primary(G1-8)……...……. 3 Secondary +1……...…….. 4 Diploma and above ……...5	

Section 2: Obstetric characterstics

Now I would like to ask you some more questions about the pregnancies you have had during your life, focusing on pregnancies that resulted in babies born alive and babies born dead. At this time, we will not be discussing miscarriages.

Q.#	Question		Go to Q.
201	How many times in total you become pregnant?	_____	
202	How many times in total you gave birth(still birth and alive birth)?	_____	
203	Have any of your pregnancies resulted in a baby that was born dead (a stillbirth)?	Yes…….01 No……...02	
204	What. was the outcome of previous pregnancy for which you recently gave birth?	Live birth… 1 Still birth…. 2	

Section 3: 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.#	Question	Codes	Go to Q./Sect.
301	In your opinion, can unexpected serious health problems related to pregnancy occur during any pregnancy that could endanger the life of a woman?	Yes ……01 No…….....02	02→304
302	If yes to Q301, what are some signs and symptoms of those serious health problems that can occur during pregnancy? PROBE: Any others?	Yes / No 1. Vaginal bleeding…… ☐ ☐ 2. Severe headache…… ☐ ☐ 3. Blurred vision..... ☐ ☐ 4. Swollen leg/face …….. ☐ ☐	Put tick mark (√) for all that apply
303	In your opinion, could a woman die from [this problem] any of these problems?	Yes.....01 No.....02	
304	In your opinion, can unexpected serious health problems occur during childbirth?	Yes ……. 01 No ……..... 02	02→307
305	If yes to Q304, what do you think are serious health problems that can occur during labor and childbirth? PROBE: Any others?	Yes / No 1.Severe vaginal bleeding ☐ ☐ 2.Convulsions ☐ ☐ 3.Labor lasting >12 hours ☐ ☐ 4.Placenta not delivered in 30 minutes after baby ☐ ☐	Put tick mark (√) for all that apply
306	In your opinion, could a woman die from [this problem] any of these problems?	Yes.....01 No.....02	
307	In your opinion, can unexpected problems/s that can occur during the first 42 days after birth that could endanger the life of the woman?	Yes ……. 01 No ……..... 02	02→310
308	If yes to Q 307, Can you mention them? PROBE: Any others?	Yes / No Severe vaginal bleeding ☐ ☐ High fever ☐ ☐	Put tick mark (√) for all that apply

		Malodorous vaginal discharge ☐ ☐	
309	In your opinion, could a woman die from [this problem] any of these problems?	Yes.....01 No.....02	
310	In your opinion, what are some things a woman can do to prepare for birth or emergency conditions? Probe: what else?	Yes No 1. Identify transport..... ☐ ☐ 2. Save money..... ☐ ☐ 3. Identify blood donor..... ☐ ☐ 4.Identify Health inst. for delivery ☐ ☐ 5. Identify skilled provider……. ☐ ☐	Put tick mark (√) for all that apply

Section 4: Personal experience related to pregnancy

In the next three sets of questions, I am going to be asking about your experiences related to the three phases women go through when having a child that we discussed earlier: pregnancy, birth, and the period after birth. I'd like to begin by speaking with you about your last pregnancy that resulted in a baby (born alive or born dead).

Q.#	Question	Codes	Go to Q./Sect.
401	Have you had attended antenatal care during your last pregnancy (for which you gave birth in the last 12 months)?	Yes……..……01 No……..... 02	 02→ 405
402	If yes to Q 401, at what gestation age did you first received antenatal care for last pregnancy?	_____ Don't remember ……..98	
403	How many times in total did you receive antenatal care during last pregnancy?	_____ Don't remember ……..98	

404	During your last pregnancy, did a health worker advise you about any of the following at least once? (Read each.)	Yes No DR 1. Danger signs during pregnancy, child birth, or soon after? …… ☐ ☐ ☐ 2. Identify place of birth or where to go if you had danger signs of serious Health problems?..... ☐ ☐ ☐ 3. Arrangements for transportation? ☐ ☐ ☐ 4. Arrangements for funds/finances? ☐ ☐ ☐ 5. Arrangements for blood donor? ☐ ☐ ☐ 6. Identifying for a healthcare Professional to deliver your baby? ☐ ☐ ☐	Put tick mark (√) for all that apply
405	If no to Q401, Why did you not see anyone for antenatal care? Probe: What else?	Yes No 1. I didn't think it is important..... ☐ ☐ 2. Health facility too far..... ☐ ☐ 3. Lack of money for Service..... ☐ ☐ 4. I didn`t get time ……..… ☐ ☐ 5. No good service at HF..... ☐ ☐ Other _____ 97 (SPECIFY)	Put tick mark (√) for all that apply
406	During this pregnancy, did you experience any serious health problems related to pregnancy?	Yes……01 No ……..... 02	02→ 501
407	If yes to Q406, What problems did you experience? THEN PROBE: Did you experience any other?	Yes No 1.Vaginal bleeding..... ☐ ☐ 2.Blurred vision..... ☐ ☐ 3.Swollen legs/face …….. ☐ ☐	Put tick mark (√) for all that apply

408	Did you seek assistance from health care professionals for this problem?	Yes ……..… 01 No ……..……..... 02	02→410
409	If yes to Q 408, Who made the final decision to seek assistance for this problem?	I my self …….....01 Me and my husband……02 Husband…… 03 my mother /My father …04 Friend/Neighbor …… 05 HEW ……. ….. 06 TBA …….. …07 Other (specify)_____97	
410	If no to Q409, what was the main reason for not to seek assistance?	Not aware of it was serous and needs care…01 No one to accompany me to HF……..... 02 Facility too far.....03 No transport.....04 Lack of money.....05 Services are not good.....06 Went to traditional/spiritual healers……07 Other (Specify_____97	

Section 5: Personal experiences related to last Birth

Now I'd like to speak with you about the birth that resulted from the pregnancy we were just discussing

Q.#	Question	Codes	Go to Q./Sect.
501	Prior to this birth, did you or your family make any arrangements or prepardeness?	Yes …….... 01 No ……..... 02	02→504
502	If yes to Q 501, What preparedness (arrangements) did you or your families made for birth or complication if any? (Probe: What else?)	Yes No 01. Identify place of delivery (Health institution)… ☐ ☐ 02. Save money…….. ☐ ☐ 03. Identify health personnel …….. ☐ ☐ 04. Identify a mode of transportation …… ☐ ☐ 05. Aranging blood donors …… ☐ ☐	Put tick mark (√) for all that apply

503	If made any, did you use the rrengements during birth or complications if encountered? Probe: which arrengements you used?	Yes No 1. Went to the health facility you identified? ☐ ☐ 2. Did you use the money that you saved? ☐ ☐ 3. Has got the health person you identified? ☐ ☐ 4. Used the transport that you identified?..... ☐ ☐ 5. Got the blood donor you identified……. ☐ ☐	Put tick mark (√) for all that apply
504	Where did you give birth for the last pregnancy?	At home…… ……01 Health post……...……02 HC…….……03 Hospital……04 private health institutions.....……05	02→ 507 03→ 507 04→ 507 05→ 507
505	If delivered at Home, Why not you gave birth in health facility? (Probe: What else?) Record all the reasons mentioned.	Yes No 1. No any problem encountered me (not needed)… ☐ ☐ 2. My husband/my family were not volunter…..…… ☐ ☐ 3. Health facility too far..... ☐ ☐ 4. No transport..... ☐ ☐ 5. Lack of money..... ☐ ☐ 6. I don't like to deliver at HF(service is not good)... ☐ ☐ Other (Specify)_____97	Put tick mark (√) for all that apply
506	Who made the final decision about where you would give birth?	I my self …….. 01 Me and my husband ……. 02 Husband……..…… 03 My mother (mother in Law) or father….. 04 Friend/Neighbor ……. 05 TBA …….. ……06 Other (specify)_____97	
507	During labor and birth, did you experience any serious health problems related to birth?	Yes …… 01 No ……..... 02	02→ 601

508	If yes to Q507, What problems did you experience? (Probe: ask for the problems which are not mentioned spontaneously).	Yes No 1. Severe vaginal bleeding……. ☐ ☐ 2.Convulsions..... ☐ ☐ 3. Labor lasting >12 hours……. ☐ ☐ 4. Placenta not delivered 30 minutes after baby ☐ ☐	Put tick mark (√) for all that apply
509	If any problem on Q 508, Did you seek assistance from health personel for this problem?	Yes …… 01 No ……..... 02	02→ 511
510	If yes to Q509, Who made the final decision to to seek assistance? (Circle for spontaneous answer/s)	1.Myself.....…….01 2.Me and my husband…..…… 02 3.My Husband…….……..03 4.My mother/ in law /Father..... 04 6. Friend/Neighbor……... 05 7. HEWs……06 8. TBA ……..……..…. 07 Other (Specify) _____97	
511	If no to Q509, what was the main reason for not to seek assistance?	Not aware of it was serous and needs care…01 No one to accompany me to HF……..... 02 Facility too far.....03 No transport.....04 Lack of money.....05 Services are not good.....06 Went to traditional/spiritual healers……07 Other (Specify_____97	

Section 6: personal experience related Postpartum of the last birth

Now I'd like to speak with you about the period after the birth we were just discussing.

Q. #	Question	Code	Go to Q/section
601	Did you experience any serious health problems related to the birth during the first 42 days after the last birth?	Yes..…… 01 No ……..... 02	02→ end
602	If yes to Q 601, What problems did you experience? (Probe: ask Any else?).	Yes No 1. Severe vaginal bleeding…… ☐ ☐ 2. High fever …… ☐ ☐ 3. Malodorous vaginal discharge..... ☐ ☐	Put tick mark (√) for all that apply
603	Did you seek assistance from health personel for this problem?	Yes ……..……..…01 No …….……. 02	01→end
604	If no to Q603, what was the main reason for not to seek assistance?	Not aware of it was serous and needs care…01 No one to accompany me to HF……..... 02 Facility too far.....03 No transport.....04 Lack of money.....05 Services are not good.....06 Went to traditional/spiritual healers……07 Other (Specify_____97	

This is the end of the interview.

THANK YOU!

Date of data collection _____ Name of supervisor _____

Name of data collector _____ Signature _____

Signature _____ Signature _____

Date _____ Date_____

Anex III. Hayyama waligaltee

Univeersitii Jimmaa fakaalty Waldhaansaa Fi Saayinsii Fayyaatti

Muummee Fayyaa Hawaasa

Gaafilee Oddeeffanoo waa'ee qophii dahumsaa fi balawwan hamoo fi sababoota kanaan walqabatan haawwan Wagga laman dabran keessatti dahan Kan Aanaa Barak keessa jiraatan irraa ragaa ittin funaanuuf qopha'ee.

Seensa

Akkam jirtan! Maqaan kiyya ---------- jedhama, ani miseensa garee qorannoo kanaa keessaa isa tokko.Waa'ee Qorrannoo kanaa irrattii yeroo gababaaf akka waliin mariyannuu si hubbachisuu barbaada'.Marii keenyatti seenuu dura Kayyoo fi haala waligala qorronno kanaa yero siif dubbisuu sirritti eega dhaggefattee booda qorrqnnoo kana kessatti hirmaachu fi hirmaachu dhabuu kee akka naaf ibistuu si gaafadha.

Qorannoo kana keesati hirmaachuun fedhi irratti Kan hundaa'ee ta'a. Hirmaachu fi dhisuuf mirgi keessan kabajamadha Qorrannoo kana irratti hirmaachuu dhisuu keetif tajajila fayyaa yeroo barbaaddetti argachuu wanni si dhorkuu hin jiru, Haata'u malee galmaa ga'umsa kaayoo qoranichaatii fi fooya'insa tajaajila fayyaa hawwani fi daa'imaniitif jecha hirmaannaan keessan murteessaa waan ta'eef akka gaafileedhaaf deebi'i kennudhaan hirmaattan kabajaan isin gaafadha. Gaafi fi deebi'iinkan fedhi irratti hunda'ee fi shallaggiin hanga daqiiqa 40 fudhachuu danda'aa. Deebiin keessan iccitidhan qabama.Deebiin namoota dhunfaa karaa kaminuu bu;aa argannoo qorrannoo kanatiin wal hinqabatu. Gabbasni bu'aa qorrannoo kana yoo kan maxxafamuu tahee iddeffannoo wali galaatin qofaatu dhihaata.

Kanaafuu qorrannoo kana keessatti hirmaachuf fedhii qabduu?

A. Eeyee B.Miti

Yoo gaafilee irratti hirmachuuf fedha qabaatan

Yeroo itti jalqabame_____ yeroo xumurame_____

. Oddefannoo qorrannoo kana kamiyyu ilalchisee teessoo armaan gadii kanaan qorataa gaafachuu dandeysan.

Immiruu Gabbisaa e –mail: emirugebisa@yahoo.com,bilbila: 0912447730, Universitii Jimma

Anex IV. Gaaffilee Afaan Oromoo tiin qophaa`e

Odefanno dhunfaa

001. Lakk. Koodii _____

002. Ganda _____ Zoonii _____ Lakk.manaa. _____

Kutaa 1ffaa:G101-111 Odeffannoo dhunfaa fi haawasummaa

G.#	Gaafii	Koodii	Gara gaafi____ Ce'ii
101	Umriin kessan meqaa?(wogga guutuudhaan)	_____	
102	Haalli herumaa kessani maal fakkata?	Hinherumne…….……...….1 Herumera …….....2 Abbaan Mana Du'era…….…….....3 Hikkadheen Jira …….…….....4	
103	Amantin kessan maali?	Ortodoksi ……..…….....01. Islaama ……..…….....02 Protestantii ……..03 Kan biraa (ibsi) ._____ 97	
104	Sabni kessan maal?	Oromoo…..…….....…01 Amhara ……..... 02 Kan biraa (ibsi)_____ 97	
105	Hujiin kessan maal?	Haadha mana ……0 1 Hojjattu Motummaa ….…..... 02 Hojjattu Dhunffaa ……..... 03 Daldaltuu ……..…….....04 Kan biraa (ibsi)_____ 97	
106	Haalli barumssa keessanii akkami?	Hinbaranne ……..... ….01 Barressu fi Dubbisu ……..... ….02 Sadarkaa 1ffaa(kutaa1-8)…..... ….03 Sadarkaa $^{2ffaa+1}$…….…..... ……04 Diploma fi Isaa ol ……..... …….05	
107	Galiin ji'aan argattu kan abba manaa dabalatee Qarshii meeqa ta`a?	Qarshidhaan_____	
108	Byy`inni maati keeti kan wajjin jiraattan meeqa ?	_____	

Gaafilen Lak.109 – 111 kan gaafatamu warra gaafi lakk.102 af deebi'ii herume jette qofa.

109	Umriin abbaa mana keeti meeqa?	_____	
110	Hujiin abbaa mana keeti maal?	Qonnan Bulaa……..01 Hojjata Motummaa …….....02 Hojjata dhabbata dhuunfaa ……03 Daldalaa Dhunfaa ……..... 04 Kan biraa (Ibsii) _____97	
111	Sadarkaan barumsa abbaa mana keeti meeqa?	Hinbaranne ……..... ….01 Barressu fi Dubbisu ……..... ….02 Sadarkaa 1ffaa(kutaa1-8)…..... ….03 Sadarkaa $^{2ffaa+1}$…….…..... ……04 Diploma fi Isaa ol ……..... …….05	

Kutaa 2ffaa: Haala Ulfaa fi Dahumsaa

G.#	Gaafi	Koodii	Gara gaafi----- Ce'ii.
201	Akka waligalatti yero meeqa ulfofte jirta?	_____	
202	Waligalatti yero meeqa deyssee jirta? (daa`ima lubbu qabuu fi hinqabne)	_____	
203	Ulfa ulfofte kessaa kan lubbuu hin qabnee deysee beektaa?	Eyye……01 Miti…….02	
204	Waggaa lamaan dabre kessa kan deessee turte, kan lubbu qabu moo kan lubbuhinqabnee?	Lubbu qaba. ……. 01 Kan lubbuu hinqabne…….02	

Kutaa 3^{ffaa}: Beekumsa Haadhaa waa`ee rakkolee fayyaa ciccimoo yeroo ulfaa,dahumsaa fi ulmaa

G.#	Gaafii	Koodii	
301	Akka yaada keetti, rakkoon fayyaa walxaxaa ykn ciccimoo **yeroo ulfaa** tasa qunnamuu ni danda'aa?	Eyyee …… 01 Lakkii……..... 02	0 2→304

302	Eyye yoo ta`e, Mallatto Midhaalee kannen ibsuu dandeysaa? (Gaafadhu: kan birahoo?)	Eyyee Miti 1. Dhigni nafa dubartii yaa'uu..... ☐ ☐ 2. Dhukkubbi mataa cima qabaachu…. ☐ ☐ 3. Ija dura akka hurrii waa nama maru.. ☐ ☐ 4. Fuula fi miilla dhiita'u..... ☐ ☐	Deebii hunda mallatto (√) itti godhi
303	Rakkoo fayyaa kanaan lubbuun ishii dabruu dandaha jette yaaddaa?	Eyyee…… 01 Lakki……..... 02	
304	Akka yaada keetti, Midhaaleen fayyaa ciccimoon **yeroo Ciniinsuu fi Dahumssa** tasa qunnamuu danda'u?	Eyyee …… 01 Lakkii……..... 02	0 2→307
305	Eye yoo ta`e Midhaalee kannen ibsuu dandeysaa? (Gaafadhu: kan birahoo?)	Eyyee Miti 1. Dhigni heddun qaama saalatin yaa'u….. ☐ ☐ 2. Off-wallaalu (Gaggabu)..... ☐ ☐ 3. Cininssu sa'a 12 ol turte……. ☐ ☐ 4. Obbaatii daqiiqaa 30 ol hin bahin ture… ☐ ☐	Deebii hunda mallatto (√) itti godhi.
306	Rakkoo fayyaa kanaan lubbuun ishii dabruu danda`a jette yaaddaa?	Eyyee…… 01 Lakki……..... 02	
307	Akka yaada keetti , Midhalee fayyaa ciccimoo**Yero Ulmaa** (guyyota 42 dahumsa booda) qunnamuu danda'u?	Eyyee …… 01 Lakkii……..... 02	0 2→310
308	Eyye yoo ta`e, Ibsuu dandeeysa? (Gaafadhu: kan birahoo?)	Eyyee Miti 1. Dhigni baayyeen nafa dubartii tiin yaa'u ☐ ☐ 2. Laydaa cimaa qabaachuu ..... ☐ ☐ 3. Dhangala'aa folii qabu qaama salaa keessa yaa`uu…… ☐ ☐	Deebii hunda mallatto (√) itti godhi
309	Rakkoo fayyaa kanaan lubbuun haadhaa dabruu dandaha jette yaaddaa?	Eyyee…… 01 Lakki……..... 02	

310	Akka yaadaa keetitti, dubartin dahumsaf maal faa qophefachu qabdi ? (Kakaasi: Kannen biraahoo?)	Eyyee Miti 1 .Mala geejiba addaan baafachu……. ☐ ☐ 2. Mallaqa Dahumsaf barbachisu qusachu.. ☐ ☐ 3. Nama dhiiga kennuf qophefachu……. ☐ ☐ 4. Ogessa fayyaa deessisu adda baafachuu.. ☐ ☐ 5. dhaabata fayyaa iddo itti deessu addaan baafachu……. ☐ ☐	Deebii hunda mallatto (√) itti godhi

Kutaa 4ffaa: Haalawwan ulfa isa boodaa kanaan walqabate jiru

G.#	Gaafii	Koodii	
401	Tajajila kununsa dahumsa duraa ulfa booda kanattif argattee jirtaa?	Eyye……..…… 01 Lakki……..... 02	02→405
402	Eye yoo ta`e, Tajaila kununsa dahumsa duraa kana ulfooftee ji'a meeqaffa irratti eegaltee?	Ji'a_____ Hin yaadadhu(HY)…… …98	
403	Yeroo (si'aa) meeqa tajajila kunusa dahumsa duraa ulfa booda kanaf argate jirta?	Yero(Si'a) _____ Hin yaadadhu……. …98	
404	Ulfa boodaa kanarrati oggessa fayyaa irraa dhimoota armaan gadii irrati yoo xiqaate yero takkallee taatu gorsa Fayyaa argatee? **Dubbisif**.	Eye Miti HY 1.Mallatoolee rakko fayyaa ciccimo yero ulfaa, dahumsaa fi dahumsa booda qunnamaa. ☐ ☐ ☐ 2. Daa'ima kee essatti akka dessuu YKN Mallatooleen hamoon kun yoo si mudate tajaajila fayyaa essait akka argattu? ..... ☐ ☐ ☐ 4.Qophii geejibaa ilaalchisee? ..... ☐ ☐ ☐ 5. Mallaqa ofeegannoo qopheffachu? ..... ☐ ☐ ☐ 06. Nama Dhiigaa ksifkennu qopheffachu ☐ ☐ ☐ 07. Ogessa fayyaa adda baafachu..... ☐ ☐ ☐	Deebii hunda mallatto (√) itti godhi

405	G401 miti yoo tahe, (Kununsa dahumsa duraa yoo hinfudhatin tahe) maalif hinfudhatin?	Eye Mit 1. Barbaachisaa ta`u isaa hinhubane……. ☐ ☐ 2. Dhaabbileen fayyaa baayyee fagodha..... ☐ ☐ 03. Gatii tajajlaaf qarshi dhabuu ..... ☐ ☐ 04. yeroo hin arganne..... ..... ☐ ☐ 05. Tajajilli gaarin dhaabata fayya keessa hinjir ☐ .....☐ Kan biraa (Ibsamu)_____97 .	Deebii hunda mallatto (√) itti godhi
406	Ulfa boodaa kanarrati rakkon fayya cimaan ulfaan walqabattee simudatera?	Eyyee…… 01 Lakki……..... 02	02→ 501
407	Eyye yoo ta`e, Rakkon si mudate maal? (Rakkolee isin hin-ibsin gafadhu).	Eye Miti Dhiigni nafa dubartii tiin Yaa'uu..... ☐ ☐ Dhukkubbi mataa cimaa qabaachuu…… ☐ ☐ Ija dura waan akka hurri nama maru..... ☐ ☐ Fuula fi miilli dhiita'u..... ☐ ☐	Deebii hunda mallatto (√) itti godhi
408	Rakko kanaaf furmaata barbaadde ogeyyi fayyaa bira deemtee turtee?	Eyyee…… 01 Lakki ……..... 02	02→ 410
409	Eyye yoo ta`e, Furmaata barbaadu fi barbaaduu dhisuuf murtii dhumaa eenyutuu murteyse?	Anuma……..01 Anaa fi abbaa manati……02 Abbaa manati……..03 Haadha/abbaa/amatii kiyya…..... 04 Hiriyaa/Ollaa…… 05 Hojetu Ekst. fayyaa ……. 06 Deysistuu aadaa …… 07 Kan biraa (Ibsi) _____ 97.	

410	G408 miti yoo ta`e, Maalif Rakko kanaaf furmaata hinbarbaadin? (Sababni guddan maali?)	Rakko cimaa ta`uu isaa hin hubanne ……01 Nama dhabata fayyaa nageessun dhabe ... …..02 Dhaabileen Fayyaa bayyee fagoodha.....03 Gejiba dhabuu.....04 Mallaqa dhabuu……..05 Tajajilli kennamu gaarii miti.....06 Qoricha aadaa nama naaf kennu biran deeme…07 Kan biraa (Ibsi) _____97 .	

Kutaa 5ffaa: Haalawwan dahumsa isa booda kanaan walqabate

G.#	Gaafi	Koodii	Gara G./kutaa …Ce'ii.
501	Ati/maatin kee dahumsa kanaaf YKN rakko qunnamuu dandahuuf qophiin gootanii turtan ni jira?	Eyyee……... 01 Lakki…….……..... 02	02→504
502	Eyye yoo tahe, qophiin gootan maal faa turee? (Gaafadhu: Kan biraahoo?)	Eyye Miti 1. Dhabbata fayyaa itti deessu filachuu.. ☐ ☐ 2. Mallaqa qusachu (qopheeffachuu)…… ☐ ☐ 3. Ogeessa fayyaa deessisu adda baafachu… ☐ ☐ 4. Gejiba addaan baafachu …… ☐ ☐ 5. Nama dhiiga namaaf kennu qophefachu… ☐ ☐	Deebii hunda mallatto (√) itti godhi

503	Qophiin goote yoo jiraate, yeroo dahumssaa YKN rakko fayyaa simuddateef kamitti fayyadamte? (Kam hojii irra olchite?) (G502 irratti kan deebiste qofaaf gaafadhu)	Eyyee Miti 1. Dhabbata fayyaa filatte deemte? …….. ☐ ☐ 2. Mallaqa qusatte itti fayyadamte……. ☐ ☐ 3. Ogeessa fayyaa filatte argatte?.....…. ☐ ☐ 4. Gejiba argatte? …… ☐ ☐ 5.Nama dhiiga siif kennu sana argatte?…….. ☐ ☐	Deebii hunda mallatto (√) itti godhi
504	Daa'ima booda kana essatti deysee?	1.Manumatti …… 01 2. Kellaa fayyaatti …… 02 3. Buufata fayyaatti ……03. 4. Hospitaalatti……..04 5. Dhabbata fayyaa dhuunfaatti.....…05	02→ 507 03→ 507 04→ 507 05→ 507
505	Manatti kan deesse yoo ta`e, sababa kee naaf ibsuu dandeysaa? (Maal faadha?)	Eyye Miti 1. Rakkon waan na hin qunnaminiif.. ….. ☐ ☐ 2. Abbaa mana/maatin waan didaniif…. ☐ ☐ 3. Dhaabatni Fayyaa bayyee fagoodha... ☐ ☐ 4. Gejibni hinjiru..... ☐ ☐ 5. Mallaqa dhabuu…… . ☐ ☐ 6.Dhabbata fayyaatti dahuu hin jaalladhu ☐ ☐ (tajaajila gaarii hin argadhu). Kan biraa (Ibsi) _____97 .	Deebii hunda mallatto (√) itti godhi
506	Dhaabbata fayyaatti dahuuf murtii dhumaa enyutu murteesse?	Anuma……01 Anaa fi abbaa manati……02 Abbaa manati……03 Haadha/abbaa/amaatii kiyya…… 04 Hiriyaa/Ollaa…… 05 Hojetu Ekst. fayyaa …… 06 Deysistuu aadaa …… 07 Kan biraa (Ibsi) _____ 97.	

507	Yero cininsuu fi dahumsa rakkon fayya ciccimoon dahumsan walqabttee siqunname jira?	Eyyee …… 01 Lakki ……..……..... 02	02→ 601
508	Rakko maaltu siqunname? (Deebii isiin hindebisin yoo jiraate gafadhu).	Eyye Miti 1. Dhigni bayyeen nafa dudartii tiin yaa'u..... ☐ ☐ 2. Hollachu/ Of wallaalu (Gaggabu)..... ☐ ☐ 3. Ciniinsuu sa'a 12-ol ture... ……..… ☐ ☐ 4. Hobbaatin eega da'imni dhalate daqiqaa 30 ol turuu……..… ☐ ☐	Deebii hunda mallatto (√) itti godhi
509	Rakko kanaaf gargaarsa argachuf yaali gotee turtee?	Eyyee …… 01 Lakki.……..... 02	02→511
510	Eyye yoo tahe,Rakko kanaaf tajaajila argachuuf murtii dhumaa kan kenne enyu?	Anuma……..01 Anaa fi abbaa manati……02 Abbaa manati……03 Haadha/Amaatii/abbaa kiyya…… 04 Hiriyaa/Ollaa…… 05 Hojetu Ekst. fayyaa …… 06 Deysistuu aadaa …… 07 Kan biraa (Ibsi) _____ 97.	
511	G 509 miti yoo ta`e, Maalif Rakko kanaaf furmaata hinbarbaadin? (Sababni guddan maali?)	Rakko cimaa ta`uu isaa hin hubanne ……01 Nama nageessun dhabe ... ……02 Dhaabileen Fayyaa bayyee fagoodha.....03 Gejibni dhabuu.....04 Mallaqa dhabuu……..05 Tajajilli kennamu gaarii miti.....06 Qoricha aadaa nama naaf kennu biran deeme…07 Kan biraa (Ibsi) _____97 .	

Kutaa 6ffaaHaalawwan ulmaa boodaa walqabate ture

G.#	Gaafii	Koodii	Gara G./Kutaa.
601	Ulmaa booda kanatti(deesse hanga turban jahaatti) rakkon fayyaa ciccimon dahumsan walqabatee, si mudatee turee?	Eyyee …….…… 01 Lakki……..……..... 02	02→ xumura
602	Eyye yoo tahe,Rakkoleen si mudatan maalfaa ture? (Rakkolee isiin ofif ibsin gaafadhu, kan biraahoo?).	Eye Miti Dhiigni nafa dubartii tiin heddu dhangala`uu.☐.. ☐ Laydaa /qaamaa gubaa cimaa.....☐ ☐ Dhangala'aan qaama saala irra bahu ajaa'uu☐ ☐ Kan biraa(Ibsi)…….97	Deebii hunda mallatto (√) itti godhi
603	Rakko kanaaf gargaarsa argachuf yaali gootee turtee?	Eyyee …… 01 Lakki..……..... 02	01→xumura
604	G 603 miti yoo ta`e, Maalif Rakko kanaaf furmaata hinbarbaadin? (Sababni guddan maali?)	Rakko cimaa ta`uu isaa hin hubanne ……01 Nama nageessun dhabe ... ……02 Dhaabileen Fayyaa bayyee fagoodha.....03 Gejibni dhabuu.....04 Mallaqa dhabuu……..05 Tajajilli kennamu gaarii miti.....06 Qoricha aadaa nama naaf kennu biran deeme…07 Kan biraa (Ibsi) _____97 .	

Kun xuumura gaafii kenyaat Galatoomaa!

Guyyaa odefannon funaaname_____ Maqaa Tohata_____
Maqaa nama odefannoo funaanee_____ Mallattoo_____
Mallattoo_____ Guyyaa_____
Guyyaa_____