

BIRTH PREPAREDNESS AND COMPLICATION READINESS  
AMONG PREGNANT WOMEN IN DUGUNA FANGO  
WOREDA, WOLAYTA ZONE

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## **ABSTRACT**

**BACK GROUND:** Every pregnant woman faces the risk of sudden, unpredictable complications that could end in death or injury to herself or to her infant. Hence, receiving care from a skilled provider has been identified as the single most important intervention in safe motherhood. Birth preparedness and complication readiness improves care seeking during child birth and obstetric emergency by reducing the delays in obtaining care. Birth preparedness and complication readiness includes planning for a birth attendant and location, arranging transportation, identifying a blood donor, and saving money.

**OBJECTIVE:** To assess birth preparedness and complication readiness and associated factors among pregnant woman in Duguna Fango Woreda, Wolayta Zone.

**METHODS AND MATERIALS:** Community based cross sectional study was conducted in October 2013. A multistage clustered sampling technique was used to select 578 pregnant women. Data were collected using pretested and structured questionnaire. Then collected data were entered in EpiData version 3.1 and analyses were done by using SPSS version 16.0. Descriptive statistics were computed to determine proportion of birth preparedness and complication readiness practices and other variables. Multivariable logistic regression analysis was used to identify the predictors of birth preparedness and complication readiness.

**RESULTS:** Five hundred sixty nine pregnant women were interviewed, with the response rate of 98.4%. Two hundred forty eight (43.6%) pregnant women identified health facility for child birth and emergency, 103(18.1%) women arranged transportation, 308(54.1%) saved money for emergency, 62(10.9%) identified skilled birth attendant and 17(3%) arranged compatible blood donor. One hundred four (18.3%) of pregnant women were well prepared and ready for emergency. The multivariable analysis shows that primigravidas, knowledge of at least two danger signs during pregnancy, knowledge of at least two danger signs during postpartum, attending antenatal care and past obstetric complication were factors associated with birth preparedness.

**CONCLUSION and RECOMMENDATION:** The birth preparedness and complication readiness practices in study community were low and knowledge of key danger signs was not comprehensive among pregnant women. The health care providers should advice pregnant women on key danger signs in comprehensive way. The government officials and partners emphasize on improving birth preparedness practice.

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## ACRONYMS

ANC	Antenatal Care
AOR	Adjusted Odds Ratio
BP/CR	Birth Preparedness and Complication Readiness
BSc	Bachelor of Science
CI	Confidence Interval
EDHS	Ethiopian Demographic and Health Survey
HF <sub>s</sub>	Health Facilities
H <sub>x</sub>	History
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
NMR	Neonatal Mortality Rate
OR	Odds Ratio
SSA	Sub-Saharan Africa
TBA <sub>s</sub>	Traditional Birth Attendants
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

## **CHAPTER ONE**

### **1 INTRODUCTION**

#### **1.1 Background information**

Maternal mortality is substantial burden to the world and it has received recognition at the global level as one of the Millennium Development Goals (1). Still now maternal mortality remains a main challenge to worldwide. According to assessment of maternal mortality in 180 countries, in 2010, it was estimated to be 287,900 maternal deaths annually worldwide. Developing country account about 99% (284,000) of global maternal deaths and more than half (162,000) of all maternal deaths were in Sub Saharan Africa. At the country level, India (56, 000), Nigeria (40, 000), Democratic Republic of the Congo (15, 000), Pakistan (12, 000), Sudan (10, 000), Indonesia (9,600), Ethiopia (9,000), United Republic of Tanzania (8,500), Bangladesh (7,200) and Afghanistan (6,400), these 10 countries comprised 60% of the global maternal deaths(2).

About 80% of maternal deaths are due to causes related to pregnancy and childbirth. Worldwide, the major causes of maternal mortality are hemorrhage (24%), infection (15%), unsafe abortion (13%), prolonged labour (12%) and eclampsia (12%) whereas primary causes of maternal mortality in Africa are hemorrhage (34%), other direct causes (17%), infection (10%), hypertensive disorders (9%) and obstructed labour (4%), abortion (4%) and anemia (4%) (3).

Since it is not possible to predict which women will experience life -threatening obstetric complications that lead to maternal mortality, every pregnant woman faces the risk of sudden, unpredictable complications that could end in death or injury to herself or to her infant. Pregnancy related complications cannot be reliably predicted, so receiving care from a skilled provider (doctor, health officer, nurse or midwife) during childbirth has been identified as the single most important intervention in safe motherhood (4).

The majority of pregnant women and their families do not know how to recognize the danger signs of complications. When complications occur, the unprepared family will waste a great deal of time in recognizing the problem, getting organized, getting money, finding transport and reaching the appropriate referral facility (5). For some of the complications like severe hemorrhage, a few minutes matter to save life, while for others hours or even days may be tolerable but with the prognosis getting worse as time goes up (6).

Thaddeus and Maine outlined three delays that influence the provision and use of obstetric services to prevent maternal deaths: (a) delay in deciding to seek care if complication occurs; (b) delay in reaching care; and (c) delay in receiving care (7). Birth preparedness and complication readiness is one intervention that addresses these delays by encouraging pregnant women, their families, and communities to effectively plan for births and deal with emergencies, if they occur. The concept of birth-preparedness and complication readiness includes knowing danger signs, planning for a birth attendant and birth location, arranging transportation, identifying a blood donor, and saving money in case of an obstetric complication. So birth preparedness and complication readiness is a strategy to promote the timely use of skilled maternal and neonatal care especially during pregnancy, childbirth and postpartum (4).

The principle and practice of birth preparedness and complication readiness (BP/CR) in a developing country setting where there is prevailing illiteracy, insufficient infrastructure, poor transport system and limited access to skilled care provider have the potential in reducing the existing high maternal and neonatal morbidity and mortality rates by promoting skilled care for all births and encourages decision making before the onset of labor (8).

There is evidence from India (9) and rural Nepal (10) that promoting BP/CR improves knowledge of mothers about obstetric danger signs, preventive behaviors and leads to improvement in care seeking during child birth and obstetric emergency.

## **1.2 Statement of the problem**

One of the objectives of the United Nations Millennium Development Goals (MDGs) was to reduce maternal mortality ratio (MMR) by an average of 5.5% every year over the period 1990–2015. At the global level, MMR decreased by less than 5.5% to reach the target of MDG (9). Of all 8 MDGs, countries have made the least progress toward maternal mortality reduction. Most Sub-Saharan African countries are not on track for meeting the targets pertaining to MMR. Recent estimates suggest that the average annual rate of reduction in MMR in SSA countries is less than 1% (11).

In the sub-Saharan African countries average antenatal care coverage is 79% and 46% of women making four or more antenatal care visits (12). The World Health Organization recommends a minimum of four antenatal care visits, based on reviewing the effectiveness of different models of service delivery. The regions with the lowest proportions of skilled health attendants at birth were eastern Africa (34%), western Africa (41%) and south-central Asia (47%), which also had the highest numbers of maternal deaths (13).

In Ethiopia, high levels of maternal mortality 676 per 100,000 live births from EDHS 2012 report which remains major public health challenge and this is not significantly different from EDHS 2005 report MMR 673 per 100,000 live births (14).

Ethiopia has only 28% antenatal care coverage this is the lowest among all countries in sub-Saharan Africa and 12% of pregnant women attend four or more antenatal care visits(12). In the country, the proportion of births attended by skilled personnel is 10% EDHS report 2012 (14). This is much lower than that of SSA 48% (12).

In many societies in the world, cultural beliefs and lack of awareness inhibit preparation in advance for delivery and expected baby. Since no action is taken prior to the delivery, the family tries to act only when labor begins (15). The most important barrier in Ethiopia to access maternal health services that women mention is taking transport to a facility (71%), followed by lack of money (68 %) and distance to healthy facility (66 %) (14).

The findings of many studies highlight the relationship between the elements of birth preparedness and complication readiness and the use of a skilled birth attendant (5). The preparedness during pregnancy, knowledge on danger signs and readiness of complication improves the use of maternal and newborn health services and reduce delays in receiving these services (4). Therefore, this paper assessed birth preparedness and complication readiness and its associated factors among pregnant women in Duguna Fango Woreda, Wolayta Zone.

## **2 CHAPTER TWO**

### **2.1 LITERATURE REVIEW**

#### **Knowledge of obstetric danger signs**

Knowledge of the danger signs of obstetric complications is the essential first step in the appropriate and timely referral to essential obstetric care. Danger signs are not the actual obstetric complications, but symptoms that are easily identified and associated with obstetric problems (15).

The study in Indore city, India shows Awareness of the mothers about at least one danger-sign of pregnancy, delivery, and newborn-related complications was being 79.2%, 78.5%, and 82.1% respectively (9).

The study done rural Tanzanian on women's awareness of danger signs of obstetric complications showed that knowledge on obstetric danger signs ultimately empower them and their families to make timely decisions to seek care from skilled birth attendants (16).

The facility based cross-sectional study that was done Accra, Ghana shows top five danger signs during pregnancy and child birth mentioned were: hemorrhage (60.7%), excessive vomiting (33.1%), swelling of face, hands and feet (28.8%), severe headache (21.5%) and severe abdominal pain (21.1%). The least mentioned sign was prolonged labour by 17 (3.5%) women. Sixty four women (13.3%) did not mention any danger sign and 21 (4.3%) women mentioned five danger signs. Four hundred nineteen (86.7%) could mention at least one danger sign (17).

The cross-sectional study done in Tanzania showed that 89 (14.8%) knew three or more obstetric danger signs. The obstetric danger signs more commonly known to women were vaginal bleeding during pregnancy (19%), foul smelling vaginal discharge (15%) and baby stops moving (14.3%) (18).

Other study that assess the knowledge of obstetric danger sign and birth preparedness practices in rural Uganda in 2011 (n=764) shows that Fifty two percent of women knew at least one key

danger sign during pregnancy, 72% during delivery and 72% during postpartum. Only 19% had knowledge of three or more key danger signs during the three periods (19).

The cross-sectional community based study that was done in northern Ethiopia, Adigrat in 2006 shows 82(15%), 14(2.6%) and 2(0.4%) mentioned at least one, two and all the three key danger signs during pregnancy respectively. One hundred seven (23%), 39(7.3%), 21(3.9%), and one (0.2%) are know at least one, two, three and all the four danger signs during labour and child birth respectively. Ninety two (17%),9(1.7%) and 2(0.4%) of the study participant mentioned at least one, two and all three danger signs during postpartum period correspondingly (20).

The other study that was done in Alata Wondo, Sidama Ethiopia shows 515 (69.3%), 304(40.9%) and 461(62.0%) knew at least two danger signs during pregnancy, childbirth and postpartum period, respectively (21).

### **Antenatal care**

The measure use of ANC is certain antenatal care interventions (for example, prevention, detection, and treatment of anemia, detection of hypertension, treatment of eclampsia, and infection prevention) can reduce the likelihood of poor maternal outcomes (22).

Community health workers and skilled health attendant who come into contact with pregnant women, their families and supporters, must provide information to pregnant women, their families. Information should focus on the signs of labour and when to seek care if danger signs appear during pregnancy, birth and the postnatal period (23).

The study done in Tanzania (n=600) showed 587 (97.8%) attended antenatal clinic at least once during their pregnancy. Two thirds of those who attended antenatal care made four or more visits. The median gestation age for antenatal care was 16 weeks (18).

More than two thirds (68%) of the women had attended the minimum recommended four visits of antenatal care and the majority had received education about danger signs 98%, where to go for

complications (98%), where to deliver from 98%, identifying a skilled health professional 88%, identifying transport 97% and saving money 98% (19).

The study that was done in Alata Wondo Sidama Zone, Ethiopia showed that 332(44.7%) of respondents attended antenatal care in their pregnancy. The mean antenatal attendance was  $2.4 \pm 1.2$ . Among those pregnant women who attended ANC more than half (61.1%) have had 1–2 visits, 104(31.6%) 3–4 visits and 24(7.3%) more than five visits (21).

The study done in Adigrat, north Ethiopia showed that 94.4% of the respondents have attended antenatal care (ANC) at least once. Of the total, 63% respondents started their follow up while the pregnancy was between 4 and 6 months and 21.2% respondents had first ANC visit by a skilled care provider in the first three months of pregnancy. 73% of the total respondents had 4 or more visits (20).

### **Birth preparedness and complication readiness practices**

All pregnant women should have plan for birth and for dealing with unexpected adverse event, such are complications or emergencies that can occur during pregnancy, child birth or postpartum period and review this plan with skilled attendant at each antenatal assessment and at least one month prior to the expected date of birth (23).

The lack of money and transportation is a barrier to seeking care as well as identifying and reaching medical facilities (7). Money saved by the women or her family can pay for health services and supplies, transport, or other costs. If the woman can afford to pay for these costs, she is more likely to seek care. Even when money is available, it can be difficult to secure transport at the last minute after a complication has arisen. Arranging transport ahead of time reduces the delay in seeking services and the delay in reaching services, respectively (15).

Making arrangements for blood donors is also important because women giving birth may need blood transfusions in the event of hemorrhage or cesarean section. The unavailability of blood is a barrier to receiving adequate and appropriate treatment (7).

The study in Indore city, India showed that 217(69.6%) had identified trained birth attendant, 199(63.8%) identified health facility for child birth and emergency, 92(29.5%) arranged for transportation and 240(76.9%) saved money. By considering at least 3 steps, 149(47.8%) were well prepared (9).

The study done in rural Uganda showed that 91% had saved money, 71% had bought birth materials, 61% identified a health professional and 61% identified means of transport. Overall 35% of the respondents were found to have made arrangements in 3 of the four birth preparedness practices and were classified as well birth prepared (19).

The study done in Adigrat, north Ethiopia revealed that 77.7% reported that they identified place of delivery, 68.9% saved money, 34.8% identified skilled provider and 24.7% identified a mode of transportation. One hundred eighteen (22%) respondents reported that they identified place of delivery, saved money and identified means of transportation for child birth(20).

The cross-sectional study that was done in Sidama Zone, Alata wondo, from the total of 743 pregnant women only a quarter (20.5%) of pregnant women identified skilled provider. Only 8.1% identified health facility for delivery and for obstetric emergencies. 7.7% identified mode of transportation. 34.5% number of families saved money for incurred costs of delivery and emergency if needed. 2.3% identified potential blood donor in case of emergency. 87.9% of the respondents reported that they intended to deliver at home, and 8% planned to deliver at health facilities. Overall only 17% of pregnant women were prepared for at least two steps and well prepared (21).

### **Factors influence birth preparedness and complication readiness practice**

#### **Socio-demographic factors**

Family income determine the preference and practice of maternal health service utilization, the study done in Nigeria revealed that financial constraint is a major obstacle to accessing skilled attendance in pregnancy(24). As a woman's social status and her health are intrinsically related, her low status is often the cause of poor access to essential health care. And a study in India shows



that women with better income are more likely to deliver in HFs, women's family income were important predictors of their place of delivery (25)

The study done in northern part of Ethiopia revealed that maternal education is the predictors in preparation for birth and complication. Literate mothers are more likely to be prepared for birth and emergency (20). Also other study done in Indore city of India shows that literate mothers tend to be well-prepared when compared to illiterate mothers. Married women were more likely to be prepared for birth and its complication than non-married (9).

Health facilities related condition such are availability of health professionals as standard, presence of essential drugs and medical equipments, ethics of health professionals and distance of health facilities highly determine the knowledge of woman on obstetric danger sign and practices of birth. The study done in Nepal shows that a distance of more than one hour travel to the maternity hospital was associated with an increased risk of home delivery (10).

### **Maternal obstetric factors**

The study done in Indore city, India availing of antenatal services were important predictors of birth preparedness and birth preparedness was positively associated with skilled birth attendance (9).

Women who received antenatal care service possibly also received some form of counseling on BP/CR and, hence, were more likely to prepare for birth and emergencies. Thus, although an ANC may not always lead to identifying women who are most in need of obstetric care, it can be an effective mechanism to promote better BP/CR and, in turn, improve the use of skilled care at birth. This is one potential model for promoting BP/CR (22, 26).

Other study done in Burkina Faso also shows that Controlling for average distance to health facility, number of antenatal care visits and planning to save money was associated with giving birth with the assistance of a skilled provider (27).

Obstetric factors that influence birth preparedness and complication readiness practices include birth order and past history of pregnancy complications. Women with parity 2 to 4 were more likely to be prepared for birth/complication than grand multiparas (more than four deliveries) and primipara (first deliveries). And mothers with past history of obstetric complication were likely to seek safe delivery care than those with no such history (28). Study that was done Nigeria revealed that Parity was a highly significant predictor of planning to save money followed by awareness of birth preparedness (24).

The community based cross-sectional study in Adigrat, northern Ethiopia Women with history of still birth were significantly related to birth preparedness and complication readiness than those who did not have history of still birth (20).

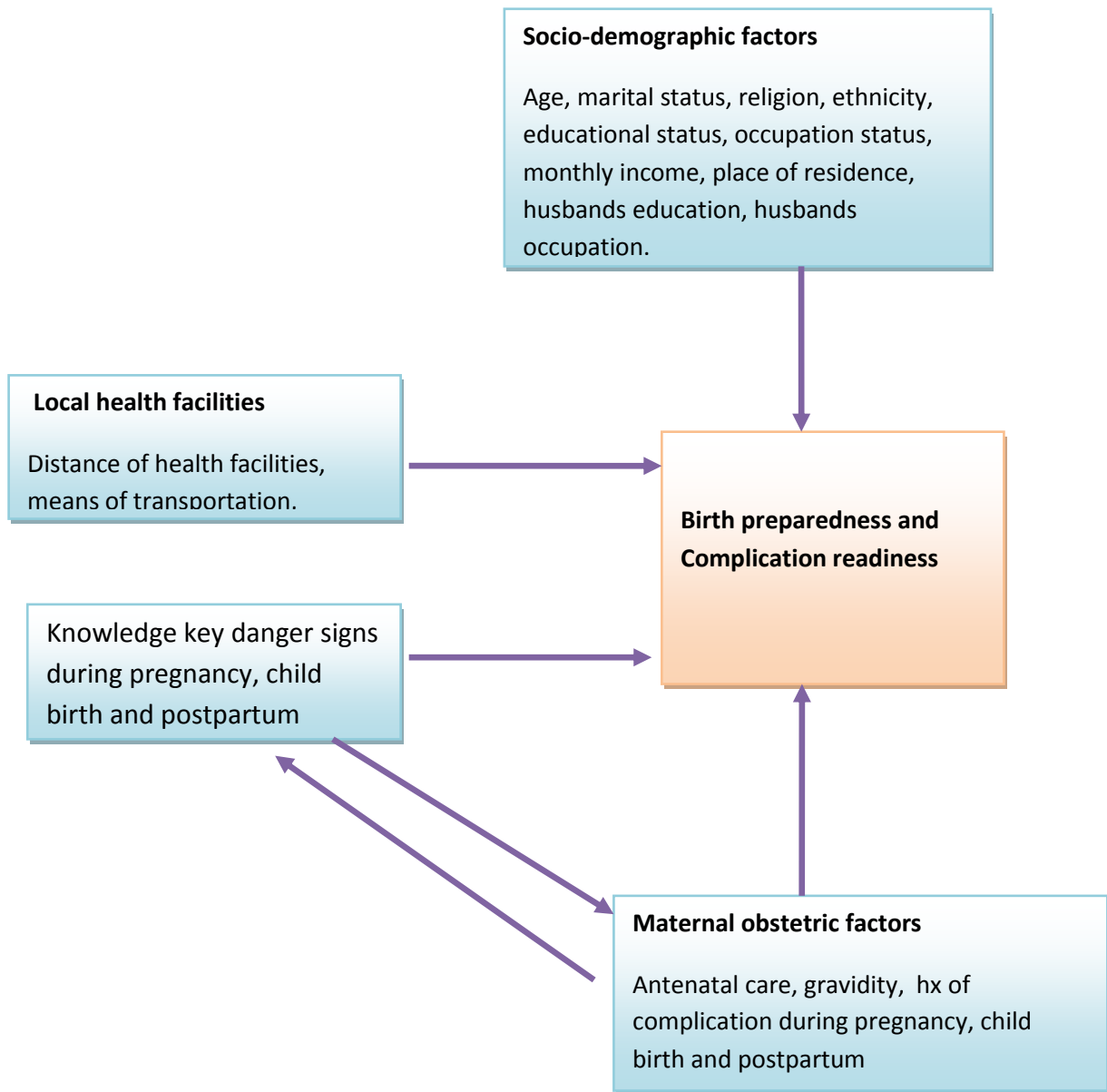


Figure 1 conceptual framework (developed after reading different literature)

## **2.2 Significance of the study**

Birth Preparedness and Complication Readiness have great potential in reducing the maternal and newborn deaths and its status is not well known in Duguna Fango Woreda, Wolayta Zone. Therefore, this paper assessed birth preparedness and complication readiness and associated factors among pregnant women in Duguna Fango Woreda, Wolayta Zone.

The findings of this study are useful to draw appropriate recommendations to policy makers, concerned government and non-government officials to make an informed decision towards the reduction of maternal mortality.

In addition to, the finding of this study may be used as a baseline data for those who are interested in carrying out further study.

## **CHAPTER THREE**

### **3 OBJECTIVES**

#### **3.1 General objective**

To assess birth preparedness and complication readiness and associated factors among pregnant women in Duguna Fango Woreda, Wolayta Zone, from October 10 – 20 /2013.

#### **3.2 Specific objectives**

1. To determine the knowledge on obstetric danger signs among pregnant women in Duguna Fango Woreda, Wolayta Zone.
2. To determine the birth preparedness and complication readiness practice among pregnant women in Duguna Fango Woreda, Wolayta Zone.
3. To identify associated factors with birth preparedness and complication readiness among pregnant women in Duguna Fango Woreda, Wolayta Zone.

## CHAPTER FOUR

### 4 METHODS AND MATERIALS

#### 4.1 Study area and period

The study was conducted in Duguna Fango Woreda, Wolayta Zone from October 10 -20 /2013. The woreda is located 362km from Addis Ababa to south. Duguna Fango woreda is one of fifteen woredas in Wolayta Zone and bounded with Hadiya zone in north and western part and south and eastern part with other woredas of Wolayta zone. Administratively the woreda is divided by 26 rural and 2 urban Kebles. In 2013 the woreda total population was estimated to 114,359 out of which 56,290 are males and 58,069 are females and 4,460 were estimated pregnant women. Total of 23,338 households were estimated in the woreda (29, 30). There are 6 health centers and 29 health posts (29).

#### 4.2 Study design

Community based cross sectional study design was employed to assess the Birth preparedness and complication readiness.

#### 4.3 Source population

All pregnant women in Duguna Fango Woreda, wolayta zone during the study period.

#### 4.4 Study population

Pregnant women in Duguna Fango Woreda and selected randomly.

#### 4.5 Inclusion and exclusion criteria

**Inclusion criteria:** pregnant women with gestational age of 3 months and above and resident in the last 6 months in Duguna Fango woreda.

**Exclusion criteria:** those women who were severely ill during data collection time.

#### 4.6 Sample size and sampling procedure

##### 4.6.1 Sample size

The sampling size was determined by using a single population proportion formula for cross sectional study, From the study done in Adigrat, North Ethiopia the prevalence of Birth preparedness and complication readiness was 22% / $p=0.22$ / (20), using 5% margin of error at 95% confidence level, 10% non response rate and using design effect of 2.

$$n = (Z_{\alpha/2})^2 p (1-p)/d^2$$
$$n = (1.96)^2 0.22(0.78)/ (0.05)^2 = 263$$

$$n = 263 + 10\% = 289, \text{ adding with } 10\% \text{ of non response rate}$$

$$\text{Total sample size was } 289 * 2 = 578$$

$Z_{\alpha/2}$  = critical value for normal distribution at 95% confidence level which equals to 1.96 (z value at  $\alpha = 0.05$ )

P the proportion of the estimate ( $p = 0.22$ )

d the desired precision of the estimate (margin of error 5%)

n the total sample size

#### **4.6.2 Sampling procedure**

Sampling procedure was started by selecting eight rural and 1 urban Kebles randomly and nine health extension workers were recruited for census of pregnant women who fulfill inclusion criteria in their respective Keble. Then all pregnant women were enumerated and sampling frame was prepared. Based on the result of the census of all mothers who were pregnant, the total sample size 578 was divided and allocated to each of the selected Keble according to the proportional to the size of census result. Using sampling frame generated from the census conducted, mothers in each keble were selected by computer generated random method. When selected study participants could not be easily interviewed for some reasons (absence), attempts were made three times to interview the respondent. In the condition when it was not possible to interview the individual after three attempts, the case was dropped out as a non-response.

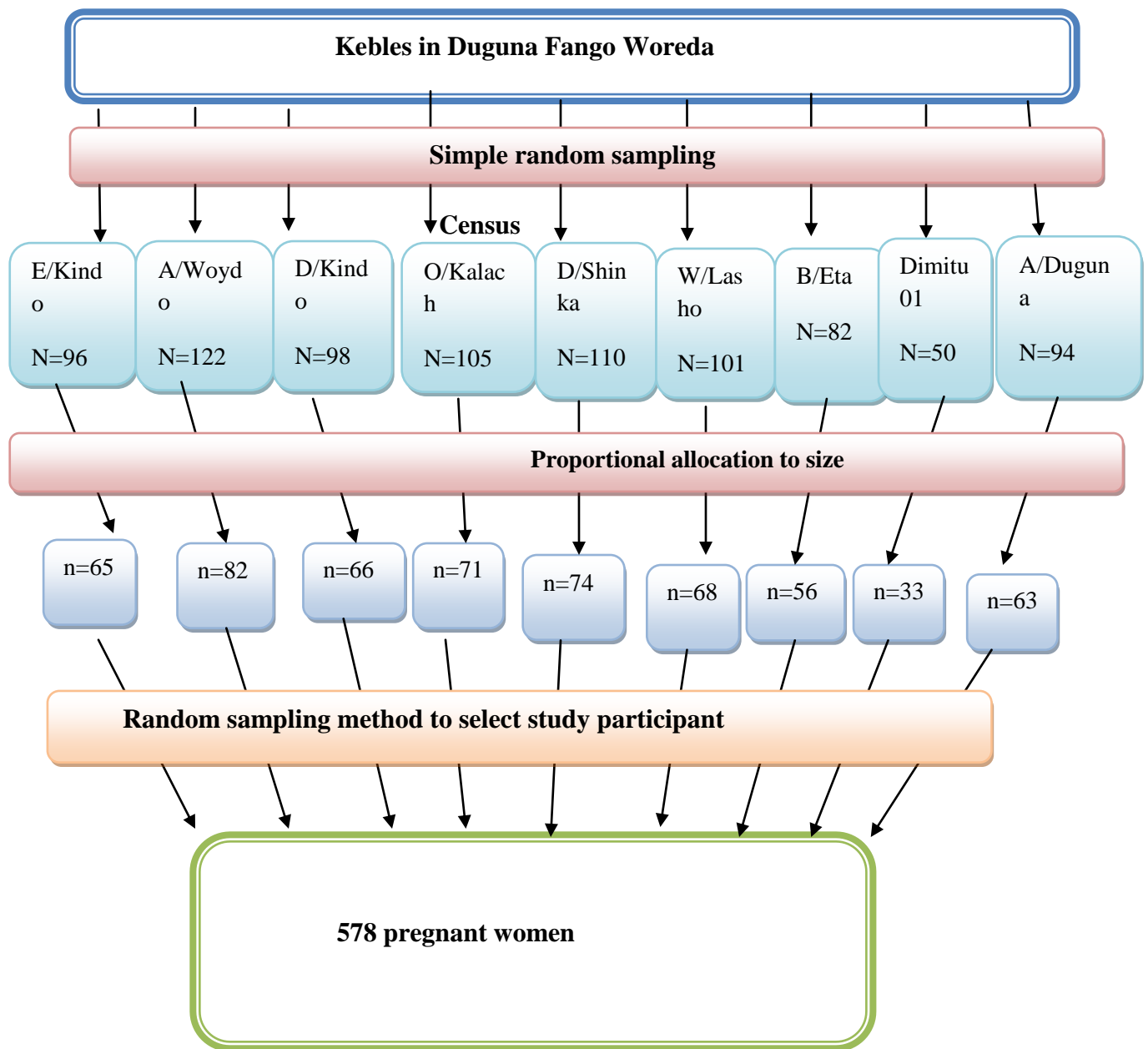


Figure 2 Schematic presentation of sampling procedure for selection of pregnant women in Duguna Fango Woreda, Wolayta Zone, 2013.



#### **4.7 Data collection technique and quality control**

Data were collected by using pre-tested, structured questionnaire, which was adapted from the monitoring birth preparedness and complication readiness: tools and Indicators for maternal and newborn health Jhpiego, an affiliate of John Hopkins University (15). Six experienced female data collectors were recruited for data collection and 2 BScs health professionals for supervision then they were trained for two days on the questionnaire and data collection procedure. The questionnaire first prepared in English and then translated to local language (Wolayta) by experienced translator and principal investigator. Then back translated to English by other language teacher and constancy was checked. Prior to the actual data collection, 5% of the questionnaire were pre tested in neighbor woreda (Damote Woyde) and checked for wording and skip. The data collection process was conducted by face-face interview for eight days. The principal investigator and the supervisors were closely supervised data collection process and checked collected data for completeness and corrective measures taken daily.

#### **4.8 Data entry and analysis**

Data were checked for completeness and entered into EpiData version 3.1 and analyses were done by SPSS version 16.0, cleaned for inconsistencies, missing values and normality of distributions. Descriptive statistics were computed to determine proportion of birth preparedness practice, antenatal care attendance and other variables. Bivariate analysis was performed between outcome variable and independent variables and variables value of p-value  $< 0.25$  were taken for multivariable logistic regression analysis. Multivariable logistic regression analysis used to identifies the predictors of BP/CR. The strength of association was measured by adjusted odds ratio with 95% CI. Statistical significance was declared at p-value  $< 0.05$

#### **4.9 Study variable**

##### **Dependant variable**

Birth preparedness and Complication Readiness

##### **Independent variables**

Socio-demographic variables

Age of mother, Marital status, Place of residence, Family income, Educational level both husband and wife, Occupational status of both husband and wife

Health facility related factors

Distance from health facility, means of transportation to health facility

Knowledge of obstetric danger signs

Knowledge of key danger signs during pregnancy, child birth and postpartum

Maternal obstetric variables

ANC visits, gravid, history of still birth, hx of complication

#### **4.10 Operational definition**

**Knowledge on danger signs:** Women were asked to spontaneously name danger signs during pregnancy, childbirth, and the postpartum then women who mentioned **at least two** danger signs during pregnancy, child birth and postpartum.

**Key obstetric danger signs** are an event that may endanger the health and life of mother and her infant. They are common, easy to recognize, and associated with a potentially severe problem.

a) **Key danger signs during pregnancy:** vaginal bleeding, swollen hands/faces and blurred vision

b) **Key danger signs during child birth:** sever vaginal bleeding, loss of consciousness, labour lasting >12hrs and placenta not delivered after 30 min.

sever vaginal bleeding during child birth means more than the normal condition, bleeding more than three coffee cup or 500ml.

c) **Key danger signs during postpartum:** vaginal bleeding, foul-smelling vaginal discharge and high fever

**Grand multigravida:** a pregnant woman more than four pregnancy.

**Primgravidas** are those women who have only one pregnancy.

**Skilled care provider:** an accredited health professional such as a midwife, health officer, doctor or nurse who has been educated and trained to expertise in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns.

**Well birth prepared and complication readiness-**those women that follow at least three steps during their current pregnancy. The steps are planning for birth attendant, identifying health facility for child birth, arranging for transportation, saving money for emergency and identifying blood donor.

#### **4.11 Dissemination plan**

The result of this study will be reported to the College of Public Health and Medical Science Department of Population and Family Health, Jimma University, Zonal Health department and local authorities. It will be published the study in journal.

#### **4.12 Ethical consideration**

Ethical clearance was obtained from the ethical review committee of Jimma University and then the concerned officials at the woreda were communicated through formal letter from the University and permission to conduct the study was obtained from District health office and informed consent was obtained from all participants. The respondents were notified that they have right to refuse or terminate at any point of the interview. The information provided by each respondent was kept confidential.

## CHAPTER FIVE

### 5 RESULT

#### 5.1 Socio-demographic characteristics

A total of 578 pregnant women were identified to participate in the study. Out of these, five hundred sixty nine pregnant women were interviewed, with the response rate of 98.4% and the rests were not found at home for interview after three repeated visits.

The majority 536(94.2%) were rural resident. Their age ranged from 17 to 40 years with mean age of 26years with  $\pm$  4std. Deviation.

The coomonst religion in study area was Protestant 402(70.7%). Regarding ethnicity of respondent, 547(96.1%) were Wolaytas and 20(3.5%) were Amhara. Five hundred sixty (98.4%) were married and the remaining 9(1.6%) were not married (not in union). Five hundred twenty four (92.1%) of the respondent were housewives, 28(4.9%) were government employee. In the educational status, 272(47.8%) were illiterate, 126(22.1%) were read and write while 171(30.1%) had attended formal education.

The majority of respondents' husbands 454(81.1%) were farmer and 37 (6.6%) were government employee. Educationally, 169 (30.2%) were illiterate and 129(23.0%) were read and write, about half (46.8%) of husbands attended primary and above educational level (Table 1).

**Table 1. Socio-demographic characteristic of pregnant woman, Duguna Fango, 2013 (n=569)**

<b>Characteristic</b>	<b>Number(n)</b>	<b>Percent (%)</b>
<b>Residence</b>		
Urban	33	5.8
Rural	536	94.2
<b>Age</b>		
<20	55	9.7
20-25	240	42.2
26-30	213	37.4
>30	61	10.7
<b>Marital status</b>		
Married	560	98.4
Not married	9	1.6
<b>Family income</b>		
<500	381	67.8
500-1000	153	26.8
>1000	35	6.2
<b>Ethnicity</b>		
Wolayta	547	96.1
Amara	20	3.5
Hadiya	2	0.4
<b>Religion</b>		
Protestant	402	70.7
Orthodox	146	25.7
Catholic	21	3.7
<b>Occupation</b>		
House wife	524	92.1
Government employee	28	4.9
Others	17	3.0
<b>Maternal education</b>		

Illiterate	272	47.8
Read and write	126	22.1
primary	112	19.7
Secondary and above	59	10.4
<b>Husband occupation(n=560)</b>		
Farmer	454	81.7
Government employee	37	6.6
Private employee	25	4.4
Merchant	44	7.8
<b>Husbands education(n=560)</b>		
Illiterate	169	30.2
Read and write	129	23.0
Primary	152	27.1
Secondary and above	110	19.6

## **5.2 Knowledge of women about key danger signs during pregnancy, child birth and postpartum**

Three hundred eighty six (67.8%), 211(37.1%) and 142(25%) of the respondent mentioned vaginal bleeding, blurred vision and swollen hand/face as danger sign during pregnancy respectively. Four hundred fifty one (79.2%) of respondent mentioned at least one danger sign during pregnancy. Two hundred thirty (40.4%) and one tenth (10%) pregnant women mentioned at least two and all the three key danger signs during pregnancy respectively.

Two hundred eighty (51%), 315(55.4%), 328(57.6%) and 44(7.7%) of the respondents mentioned sever vaginal bleeding, labour lasting more than twelve hours, placenta not delivered within thirty minute and convulsion as key danger sign during child birth respectively. Four hundred ninety two (86.4%), 383(67.3%), 122(21.4%) and 11(1.9%) mentioned at least one, at least two, at least three and all the four danger signs during and child birth correspondingly.

Three hundred fifty three (62%), 91(16%) and one third (33.2%) of respondent mentioned vaginal bleeding, foul-smelling vaginal discharge and high fever as danger sign during postpartum respectively (Table 2). About three fourth (74.8%) of the respondents remembered at least one danger sign during postpartum, 164(28.8%) and 21(3.7%) of the respondent mentioned at least two and all the three key danger signs during postpartum respectively.

When the scores were combined for three periods only 85(14.9%) of the respondent mentioned at least six key danger signs in all three periods.

**Table 2. Pregnant women who mentioned key danger signs during pregnancy, child birth and postpartum, Duguna Fango, 2013 (n=569)**

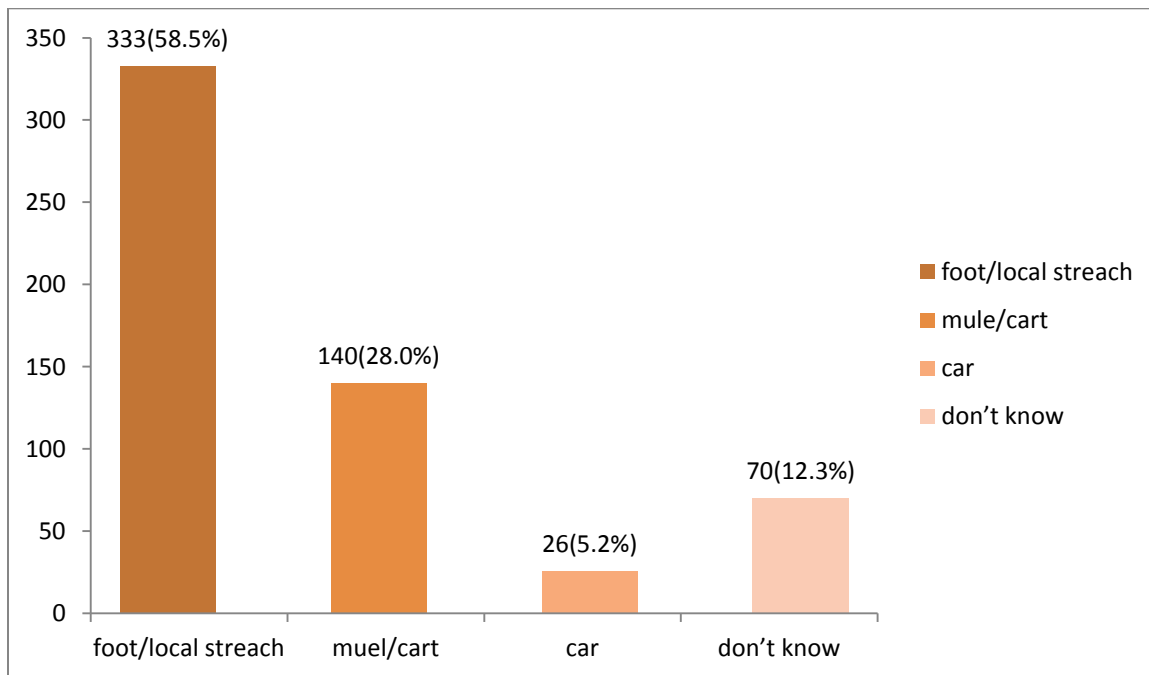
<b>Periods and key danger signs</b>	<b>Number(n)</b>	<b>Percent (%)</b>
<b>During pregnancy</b>		
Vaginal bleeding	386	67.8
Swollen hands/face	211	37.1
Blurred vision	142	24.9
<b>During labor and child birth</b>		
Severe vaginal bleeding	280	51.0
Convulsion	44	7.7
Labor lasting >12hrs	315	55.4
Placenta not delivered 30min after baby	328	57.6
<b>During postpartum</b>		
Severe vaginal bleeding	353	62.2
Foul-smelling vaginal discharge	91	15.9
High fever	189	33.2



### 5.3 Health facility related factors

About four hundred sixty seven (82.1%) reported that health centers/hospitals were a place where a women could get delivery service with attendant from health professional, 32(5.6%) were mentioned that the health post where a place that pregnant woman get delivery service assisted by health professional and the remaining 70 (12.3%) didn't know the place that could give delivery service.

From the respondents about 333(58.5%) travel to local health facility by foot or local stretch, 140 (28%) women travel by carts/mule and 26 (5.2%) were use car (fig 3). Four hundred nine (71.9%) travel less than two hours to reach local health facility to have maternal health service, 90 (15.8%) were travel more than two hours to health institution and 70(12.3%) didn't know the travel time to local health facility. Three fourth (74.5%) of the respondent mentioned that they were interested in the local health facility.



**Figure 3 Means of transportation to local health facility for pregnant women in Duguna Fango, 2013.**

#### **5.4 Antenatal care during current pregnancy and maternal obstetric characteristics**

Three hundred forty two (60.1%) pregnant women attended antenatal care service at least once during their current pregnancy. The mean ANC visits that women were received was 2 with  $\pm$  0.7 std. Deviation during current pregnancy. Among antenatal visitor 251 (73%) pregnant women were visited health professional for antenatal care; 91 (27%) saw health extension workers. The mean gestational age during their first ANC visit was 4.7 months with  $\pm$  1.1 std. Deviation and about forty five (13.2%) were started ANC visit in first trimester, the majority 278(81.3%) were started in second trimester and 19(5.6%) were started in third trimester.

About one hundred sixty five (48.2%) were planned to attend four ANC visits, 118 (34.5%) were planned five and more visits and 59 (17.3%) were planned to have three and less visits.

Majority of ANC user 285(83.3%) were reported that health care provider advised on danger signs, 271 (79.2%) were advised where to go if danger signs happen. Three hundred twelve (91.2%) reported that health care provider advised on where women should give birth, 96 (28.1%) were advised to arrange transportation to go health facility, 150 (43.8%) were advised to save money for expense of emergency and birth related conditions, only few 20 (5.8%) were advised to arrange compatibly blood donor for emergency and 138 (40.8%) were advised to arrange preferred health professional to assist child birth (Table 3).

About 227(39.9%) of respondents were not follow antenatal service. The reasons that pregnant women mentioned for not attending antenatal care, 136 (60.2%) were not know the service and its advantage, 72 (31.7%) were not attended due to the distance of health facility, 39(17.2%) were mentioned that they had no one to accompany them to get antenatal care and 4(1.8%) were not go for antenatal service because they think that the service was too expensive (fig 4). The percent is greater than hundred because one respondent mentioned one or more reasons.

Three hundred fourteen (55.2%) of pregnant women were planned to attend postnatal care after delivery, out of these 180(57.3%) were planned to follow at health center, 128(40.8%) were planned to attend at health post and the remaining 6(1.9%) were planned to be checked by TBAs.

Among respondents 98(17.2%) were pregnant for the first time/primigravida/, 365(64.1%) were pregnant for 2 to 4 times and 106(18.7%) were pregnant for more than four times.

Thirty eight (6.7%) respondents mentioned that they were suffered from obstetric complication during their previous pregnancy and child birth and 531(93.3%) of respondents have no histories of obstetric complication.

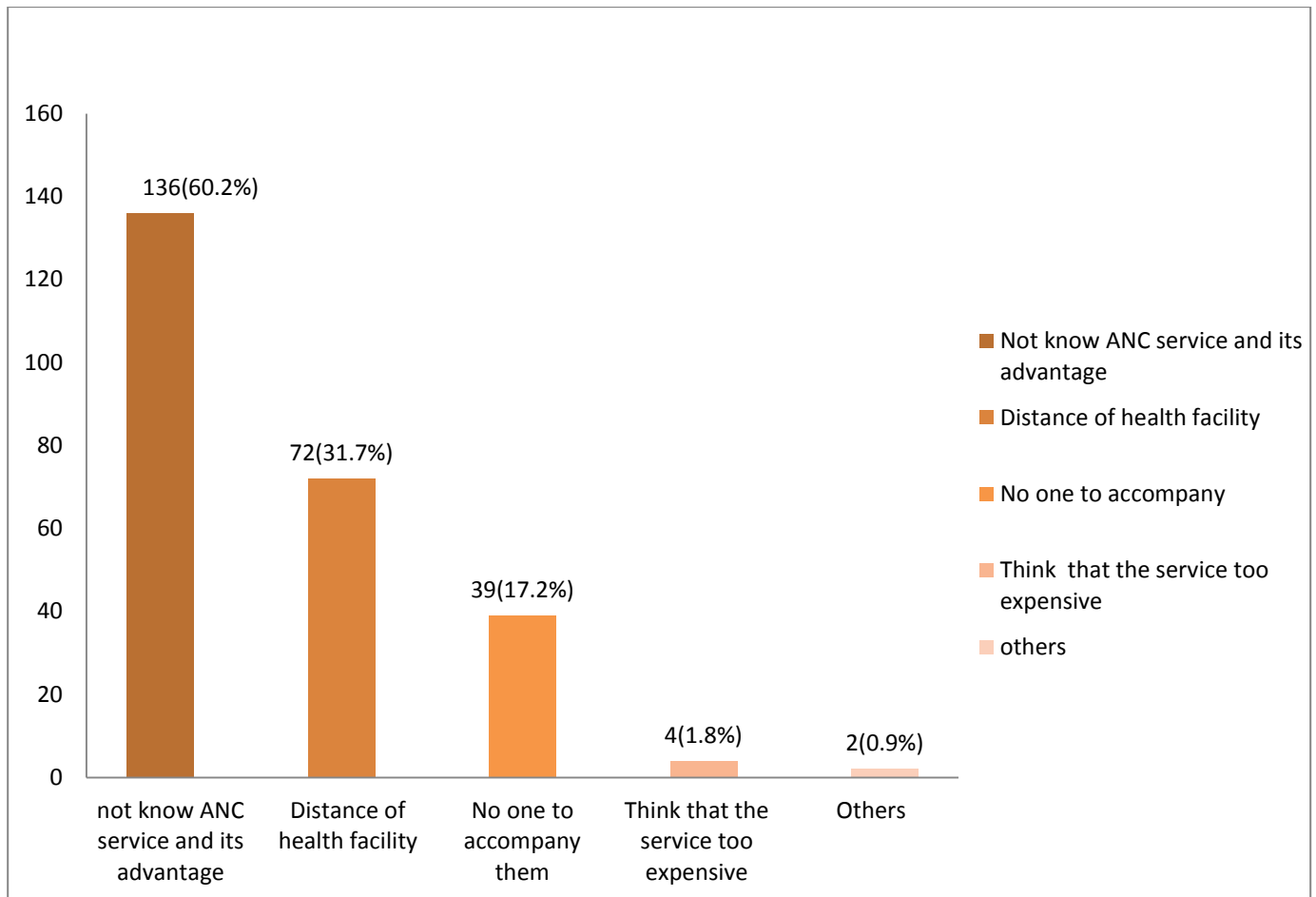


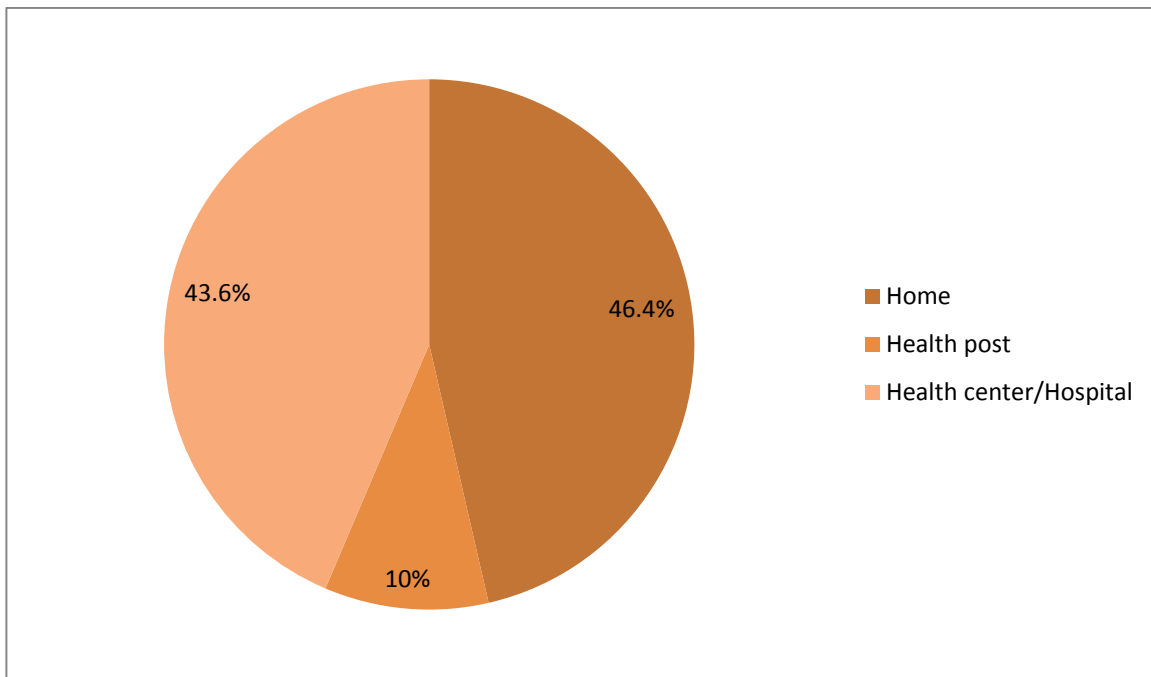
Figure 4 Reasons for not attending antenatal care among pregnant women in Duguna Fango Woreda, 2013.

**Table 3 . Antenatal care utilization and advice provided on Birth preparedness and complication readiness among pregnant women in Duguna Fango woreda, 2013.**

Characteristics	Number(n)	Percent (%)
Antenatal care during current pregnancy(n=569)		
Yes	342	60.1
No	227	39.9
Started ANC service(n=342)		
1 <sup>st</sup> trimester	45	13.2
2 <sup>nd</sup> trimester	278	81.3
3 <sup>rd</sup> trimester	19	5.6
Person provide ANC (n=342)		
Health professional	251	73.0
Health extension worker	91	27.0
Advise danger signs(n=342)		
Yes	285	83.3
No	57	16.7
Advise where to go if danger signs happen(n=342)		
Yes	271	79.2
No	71	20.8
Advise to identify health facility(n=342)		
Yes	312	91.2
No	30	8.8
Advise for transportation(n=342)		
Yes	96	28.1
No	246	71.9
Advice to save money(n=342)		
Yes	150	43.9
No	192	56.1
Advice arrangement for blood donor (n=342)		
Yes	20	5.8
No	322	94.2
Advice to identify health professional(n=342)		
Yes	139	40.6
No	203	59.4

### 5.5 Birth preparedness and complication readiness practices

Two hundred sixty four (46.4%) of pregnant women planned to give birth at home, 248 (43.6%) pregnant women planned health center/ hospital birth and 57 (10%) of respondents planned health post for child birth (fig 5). More than three fourth (77.2%) respondents decided the place of delivery by themselves, 115(20.2%) respondents/husbands decided place for child birth and 13 (2.3%) and 2(0.4%) health professionals and friends/neighbors decided place of delivery respectively.



**Figure 5 plan for place of child birth among pregnant women in Duguna Fango, 2013**

Two hundred forty eight (43.6%) of the respondents identified health facility for emergency and child birth, only 103 (18.1%) pregnant women arranged transportation to health facility, more than half (54.1%) of pregnant women saved money for emergency and other expense, one tenth (10.9%) of respondents identified skilled birth attendant for child birth and only few 17(3%) pregnant women arranged for compatible blood donor (Table 4). The birth preparedness and complication readiness was computed from five key elements, those are identifying health facility, arrangement for transportation, save money for expense, identified skilled health professional and arrangement for compatible blood donor. By considering at least three of the steps take as well prepared. One hundred four (18.3%) of pregnant women were well prepared and ready for emergency.

**Table 4. Birth preparedness and complication readiness practices among pregnant women in Duguna Fango Woreda, 2013 (n=569)**

<b>Characteristics</b>	<b>Number(n)</b>	<b>Percent (%)</b>
<b>Identified health facility</b>		
Yes	248	43.6
No	321	56.4
<b>Arranged for transportation</b>		
Yes	103	18.1
No	466	81.9
<b>Save money</b>		
Yes	308	54.1
No	261	45.9
<b>Arranged compatible blood donor</b>		
Yes	17	3.0
No	552	97.0
<b>Identified skilled birth attendant</b>		
Yes	62	10.9
No	507	89.1
<b>BP/CR practice</b>		
0	202	35.5
1	144	25.3
2	119	20.9
3	66	11.6
4	26	4.6
5	12	2.1
<b>At least three elements</b>	104	18.3

## **5.6 Factors associated with birth preparedness and complication readiness**

Age of mother, residence, gravidity, monthly income, maternal education, knowledge of at least two key danger signs during pregnancy, knowledge of at least two key danger signs during child birth, knowledge of at least two key danger signs during postpartum, ANC attendance and history of obstetric complication are selected as candidate variable with  $p < 0.25$  in bivariate analysis for multivariate logistic regression.

The multivariable logistic regression analyses showed that the gravidity of pregnant women was associated with the birth preparedness and complication readiness, primigravidas were more likely to be well prepared than multigravida (AOR=3.37, 95% CI: 1.45-7.82).

There was statistical significant association between knowledge of key danger signs during pregnancy and well preparedness, pregnant women who had knowledge of at least two key danger signs during pregnancy were more likely to be well prepared than those who didn't know (AOR = 2.81, 95% CI: 1.69-4.67).

There was also association between knowledge of key danger signs during postpartum and well prepared, women who knew at least two key danger signs during postpartum were more likely to be well prepared than those who didn't (AOR= 3.09, 95% CI: 1.88-5.10).

The ANC attendance has statistical significant association with birth preparedness, those who attended antenatal care during their current pregnancy were more likely to be well prepared than their counterparts (AOR =2.95, 95% CI: 1.62-5.37).

Pregnant women who had history of obstetric complication during pregnancy, child birth and postpartum were more likely to be well prepared than those who did not have history of complication (AOR=2.98, 95% CI: 1.35-6.58) (Table 5).

**Table 5. Association of selected variables with Birth preparedness and complication readiness, Duguna Fango woreda, 2013 (n=569)**

Variables	Birth preparedness		Crude OR OR(95% CI)	Adjusted OR OR(95% CI)
	Well prepared(n=104)	less prepared(n=465)		
<b>Age</b>				
≤ 25 year	61(58.7)	234(50.3)	1.40(0.91-2.15)	0.91(0.52-1.59)
> 25 year	43(41.3)	231(49.7)	1.0	1.0
<b>Residence</b>				
Urban	13(12.5)	20(4.3)	3.17(1.52-6.62)	1.76(0.75-4.14)
Rural	91(87.5)	445(95.7)	1.0	1.0
<b>Gravidity</b>				
1	27(26.0)	71(15.3)	2.06(1.10-4.17)	3.37(1.45-7.82)*
2-4	65(62.5)	300(64.5)	1.26(0.69-2.28)	1.84(0.89-3.79)
≥5	12(11.5)	94(20.2)	1.0	1.0
<b>Monthly income</b>				
≤ 500birr	62(59.6)	319(68.6)	1.0	1.0
>500birr	42(40.4)	146(31.4)	1.48(0.95-2.29)	1.37(0.83-2.26)
<b>Maternal education</b>				
No formal education	66(63.5)	332(71.4)	1.0	1.0
Formal education	38(36.5)	133(28.6)	0.69(0.45-1.08)	0.68(0.39-1.17)
<b>Knowledge of at least two danger signs during pregnancy</b>				
Yes	73(70.2)	157(33.8)	4.62(2.91-6.33)	2.81(1.69-4.67)**
No	31(29.8)	308(66.2)	1.0	1.0
<b>Knowledge of at least two danger signs during childbirth</b>				



Yes	90(86.5)	293(63.0)	3.77(2.08-5.83)	1.72(0.87-3.37)
No	14(13.5)	172(37.0)	1.0	1.0
Knowledge of at least two danger signs during postpartum				
Yes	58(55.8)	106(22.8)	4.27(2.74-6.65)	3.09(1.88-5.10)**
No	46(44.2)	359(77.2)	1.0	1.0
ANC attendance				
Yes	87(83.7)	255(54.8)	4.21(2.42-7.31)	2.95(1.62-5.37)**
No	17(16.3)	210(45.2)	1.0	1.0
History of complication				
Yes	17(16.3)	21(4.5)	4.13(2.09-7.81)	2.98(1.35-6.58)*
No	87(83.7)	444(95.5)	1.0	1.0

\* Variables significant at  $p < 0.05$

\*\* Variables significant at  $p < 0.01$

## CHAPTER SIX

### 6 DISCUSSION

Over half of the studied women had antenatal care visit, which is lower when compared to study done in Adigrat, Northern Ethiopia in 2006 which is 94.4% (20). Evidences suggest that early initiation of antenatal care is more effective than late visitors (15), in this study 13.2% of ANC visits were in first trimester which is lower when compared to the study done in Adigrat, Northern Ethiopia result 21.2% (20). This is due to the majority of participants in this study were rural residents and ANC service utilization and early initiation were common in urban than rural.

Two hundred thirty (40.4%), 383(67.3), 164(28.8%) mentioned at least two key danger signs during pregnancy, child birth and postpartum. This finding is higher than that of the study done in Adigrat, Ethiopia in 2006 (20). This could be due to implementation of community health extension program that focus on home to home health education. Other important finding of this study was 85(14.9%) of respondent were mentioned at least six key danger signs in all three periods. This is comparable with the finding from Mbarara district, Uganda (19). This shows that the knowledge on key danger signs of pregnant women is not comprehensive.

The important finding of this study is birth preparedness practice, 43.6% of pregnant women identified health facility for child birth and obstetric emergency, which is lower than the study done in Indore city India 63.8% (9). This could be due to the difference in socio-demographic characteristics and implementation of related health program in Indore city of India.

Even though arrangement for mode transportation to health facility is important to save the life of mother, 18.1% of pregnant women were arranged mode of transportation to health facility which is lower than the study done in Indore city India 29.5% and Adigrat 24.7% (9, 20). This is due to the respondents in this study were rural dwellers and majority of respondents used local carts or stretch as means of transportation to health facility and advice on transportation may not include local available mode of transportation.

This study shows that less than one fifth, 18.3% of pregnant women were well prepared for birth and obstetric emergency by considering preparation in at least three steps out of five steps. This finding is lower than Indore city India 47.8% (9) and Mbarara district, Uganda 35% (19). This

could be due to the difference in study area /socio-demographic characteristics/ and implementation of related health program in Indore city India and Mbarara district, Uganda.

The multivariate logistic regression analyses showed that the gravidity of pregnant women was associated with the birth preparedness and complication readiness, primigravidas were more likely to be well prepared than multigravida (AOR=3.37, 95% CI: 1.45-7.82), which similar with the study done in Aleta Wondo, Sidama Zone (21). This is due to primigravidas had no experience related to pregnancy and high fear toward obstetric complication than that of pregnancy before.

A women who have knowledge of at least two key danger signs during pregnancy and postpartum were more likely to be well prepared (AOR=2.81, 95% CI: 1.69-4.67) and (AOR=3.09, 95% CI: 1.88-5.10) respectively, which is consistent with study done on knowledge of obstetric danger sign and birth preparedness in Mbarara, Uganda (19). This is due to the knowledge of the danger signs of obstetric complications is the essential aspect of birth preparedness for women to seek skilled attendance and timely referral to essential obstetric care (15).

The ANC attendance was associated with well birth preparedness and complication ready (AOR =2.95, 95% CI: 1.62-5.37) which is similar with the study done on Birth preparedness and complication readiness in Adigrate Ethiopia, Aleta Wondo, Sidama Zone and Indore city India (20,21,9). This is because women who received antenatal care service also receive counseling on component of birth preparedness and complication readiness were more likely to prepare for birth and emergency, ANC is an effective mechanism to promote well prepared for birth and emergency, which improves the use of skilled birth attendant (22).

This study revealed that women with history of obstetric complication were more likely to be well prepared than their counterparts (AOR=2.98, 95% CI: 1.35-6.58) which is similar with the study done in Adigrat, Ethiopia (20). This could be the reason that women perceive serious problem based on their previous complication and prepared for emergency occurrence.

## **7 LIMITATION OF THE STUDY**

### **7.1 Limitation**

Pregnant women have not completed their pregnancy; they may not yet have had the opportunity or need to make arrangements related to BP/CR.

## **8 CONCLUSION**

The knowledge of danger signs during pregnancy, child birth and postpartum was not comprehensive.(comprehensive knowledge on danger signs was low in study area).

This study shows that half of pregnant women planned to give birth at home, few of pregnant women arranged mode of transportation to health facility for child birth and emergency, only one tenth of women identified skilled birth attendant. The birth preparedness practice in study area was low, only 18.3% pregnant women were well prepared for child birth and obstetric complication.

This study shows that attending antenatal care, knowledge of at least two danger signs during pregnancy and postpartum, primigravida and history of past obstetric complication were factors associated with the birth preparedness and complication readiness.

## **9 RECOMMANDATION**

The entire health care provider should advice key danger signs in comprehensive ways to all pregnant women and focus on where to go if they happen.

ZHD, WorHO, health facilities should improve the status of birth preparedness and complication readiness by availing antenatal care service to all pregnant women.

Community leader strengthen the BP/CR by community mobilization on components of birth preparedness especially mode of transportation and facilitating fund raising during emergency.

Researchers are recommended to do more study on birth preparedness and complication readiness in health facility level.

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## **11 APPENDIX**

### **11.1 Informed verbal consent form**

Good morning/ afternoon. My name is \_\_\_\_\_, I am member of research team and now we are conducting a survey in selected kebles of Duguna Fango woreda to assess Birth Preparedness and Complication Readiness among woman. You have been chosen to participate in this study by chance and I am asking your for a little of your time, about thirty minutes. I don't need your name and address. Your answer to any of the question will not be given to anyone else and no reports of the study will ever identify you.

Are you willing to participate?

Yes.....1,      No.....2

Thank for your cooperation

## 11.2 Questionnaire

Good morning/ afternoon. My name is \_\_\_\_\_, I am member of research team and now we are conducting a survey in selected kebles of Duguna Fango woreda to assess Birth Preparedness and Complication Readiness among woman. You have been chosen to participate in this study by chance and I am asking your for a little of your time, about thirty minutes. I don't need your name and address. Your answer to any of the question will not be given to anyone else and no reports of the study will ever identify you.

Are you willing to participate?

Yes.....1, No.....2

Thank for your cooperation

### Section 1- socio demographic factors

Q #	QUESTION	CODES	GO TO Q
101	Residence	Urban.....1 Rural .....2	
102	How old are you now	Age in completed years.....	
103	What is your ethnicity	Wolayta...1 Amara...2 Hadiya.....3 others.....4	
104	Religion	Protestant...1 Orthodox.....2 Muslim.....3 Catholic.....4 Others.....5	
105	Occupation	House wife....1 Govt employee...2 Private employee...3 Others.....4	
106	Educational Status	Illiterate.....1 Read and write....2 primary Education...3 2nd and above.....4	
107	Monthly income	In birr_____	
108	What is your marital status now	Single..... 1 Married/in union..... 2	

		Widowed ...3 Divorced..... 4	
109	Husband's occupation	Farmer...1 Govt employee.....2 Private employee.....3 Other.....4	
110	Husband's educational Status	Illiterate.....1 Read and write.....2 primary Education.....3 2nd and above.....4	
111	Have you been pregnant before?	yes..... 1 no..... 2 <b>if yes how many times</b> _____	
112	Have you safer any complication during previous pregnancy, child birth or postpartum	Yes .....1 No .....2 If yes during when Pregnancy .....1 Labour/child birth.....2 Postpartum ..... 3	

## Section 2 Knowledge

201	In your opinion, can unforeseen problems related to pregnancy occur during any pregnancy or childbirth that could endanger the life of a woman?	Yes.....01 No.....02 Don't Know.....98	
202	What are some serious health problems that can occur during pregnancy that could endanger the life of a pregnant woman? (Circle all the response given.) PROBE: Any others?	Vaginal bleeding .....01 Blurred Vision .....02 Swollen Hands/Face.....03 Other _____ 97 (Specify) None.....00 Don't Know.....98	→ 204
203	Could a woman die from any of these problems?	Yes.....01 No.....02 Don't know.....98	
204	What are some serious health problems that can occur during labor and childbirth that could endanger the life of a pregnant woman? (Circle all the response given.) PROBE: Any others?	Severe vaginal Bleeding.....01 Convulsions.....02 Labor Lasting >12 Hours.....03 Placenta Not Delivered 30 Minutes After Baby.....04 Other _____ 97 (Specify) None.....00	

		Don't Know.....98	→ 206
205	Could a woman die from [this problem] any of these problems?	yes.....01 no.....02 don't know.....98	
206	What are some serious health problems that can occur during the first 2 days after birth that could endanger the life of the woman? (Circle all the response given.) PROBE: Any others?	Severe vaginal bleeding.....01 Foul-smelling vaginal discharge.....02 High fever.....03 Other _____ 97 (specify) none.....00 don't know.....98	→ 208
207	Could a woman die from any of these problems?	yes.....01 no.....02 don't know.....98	
208	What are some serious health problems that can occur during the first 7 days after birth that could endanger the life of a newborn baby? (Circle all the response given.) PROBE: Any others?	Difficult or fast breathing.....01 Baby very small.....02 Convulsions/spasms/rigidity .....03 Lethargy/ unconsciousness .....04 Other _____ 97 (specify) None.....00 Don't know.....98	→ 210
209	Could a newborn baby die from any of these problems?	Yes.....01 No.....02 Don't know.....98	
210	Have you ever heard the term "birth Preparedness"?	yes.....1 no.....2	
212	In your opinion, what are some things a woman can do to prepare for birth? (Circle all the response given.)	Identify health facility.....01 Identify mode of transport.....02 Save money.....03 Identify blood donor .....04 Identify skilled provider.....05 Other _____ 97 (specify)	
213	Does your community provide services to assist women in preparing for birth? (Circle all the response given.)	Yes no don't know Transport.....1 .....2 ..... 98 Financial.....1 .....2 .....98 Other _____ 1 .....2 ..... 98	

**Section 3 Perceptions of local health facilities**

301	Do you know of a place where a woman	Home .....01	
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	can go to give birth to a baby with assistance from a health professional or midwife?	Health post.....02 Health center/ Hospital .....03 Private health facilities.....04 Other.....97 Don't know.....98	
302	In your community, how would a woman go to health facility? PROBE: What type of transportation would she mainly uses to get to the health facility?	Car .....01 Mule/cart .....02 On foot, local stretch.....03 Other .....97 (specify) Don't know.....98	
303	In general, how long would it take to reach health facility? IF LESS THAN 2 HOURS, RECORD IN MINUTES. OTHERWISE, RECORD IN HOURS	Hours .....1 <input type="text"/> <input type="text"/> Minute .....2 <input type="text"/> <input type="text"/> Don't know.....98	
304	How are the services in facility?	Excellent.....01 Good.....02 Average .....03 Poor.....04 Don't know.....98	

**Section 4 . Personal experience related to current pregnancy**

401	Have you attend antenatal care during your current pregnancy?	Yes.....1 no.....2	407
402	How many times in total have you received antenatal care during this pregnancy?	No. Of times..... Don't know.....98	
403	How many months pregnant were you when you first received antenatal care for this pregnancy?	Months..... Don't know/don't remember.....98	
404	Whom did you first see for a checkup on your current pregnancy?	Health professional.....01 Health extension.....02 TBA.....03 Relatives/friends.....04	
405	How many antenatal visits do you plan to go to during this pregnancy?	No. Of times..... Don't know.....98	
406	During this pregnancy, has a health worker advised you about any of the following at least once?	Yes No Don't know Danger signs..... 01..... 02..... 98 Where to go..... 01..... 02..... 98	

	<p>Danger signs of serious health problems during pregnancy, childbirth, or soon after?</p> <p>Where to go if you had danger signs of serious health problems?</p> <p>Where you should give birth to your baby?</p> <p>Arrangements for transportation?</p> <p>Arrangements for funds/finances?</p> <p>Arrangements for a blood donor?</p> <p>Arrangements for a healthcare Professional to deliver your child?</p>	<p>Where deliver..... 01..... 02..... 98</p> <p>Transport..... 01..... 02..... 98</p> <p>Money..... 01..... 02..... 98</p> <p>Blood donor ..... 01..... 02..... 98</p> <p>Health professional..... 01..... 02..... 98</p>	
407	<p>Why have you not seen anyone for antenatal care? (circle all responses given.)</p>	<p>Do not know here to go..... 01</p> <p>Health facility too far..... 02</p> <p>Too expensive..... 03</p> <p>No one was there to accompany..... 04</p> <p>No good service..... 05</p> <p>Other _____ 97</p>	
408	<p>Have you or your family made any arrangements for the birth of this child?</p>	<p>Yes..... 01</p> <p>No..... 02</p> <p>Don't know..... 98</p>	<p><b>410</b></p>
409	<p>Which arrangements have you or your family made for the birth of this child? (Circle all responses given.) Then probe: did you [any remaining arrangements]?</p>	<p>Identify Transport..... 01</p> <p>Save money..... 02</p> <p>Identify blood Donor..... 03</p> <p>Identify skilled Provider..... 04</p> <p>Other _____ 97</p>	
410	<p>Where do you plan to give birth to this baby?</p>	<p>Home.....01</p> <p>Health post.....02</p> <p>Health center.....03</p> <p>Hospital.....04</p> <p>Other.....97</p>	
411	<p>Who made the final decision about where you will give birth?</p>	<p>Respondent..... 01</p> <p>Respondent &amp; husband ..... 02</p> <p>Friend/neighbor..... 03</p> <p>Health professional..... 04</p> <p>TBA..... 05</p> <p>Other _____ 97 (specify)</p> <p>Don't know ..... 98</p>	

412	Who do you expect will assist you with the birth?	Health professional.....01 Health extension.....02 TBA.....03 Relatives/friends.....04	414
413	Who made the final decision about who will assist you with the birth of this baby?	Respondent..... 01 Respondent & husband ..... 02 Friend/neighbor..... 03 Health professional..... 04 TBA ..... 05 Other _____ 97 (specify) Don't know ..... 98	
414	After you give birth, are you planning to have someone check on your health?	Yes..... 1 No ..... 2	stop
415	Where do you plan to go to have someone check on your health after you give birth?	TBA s Home.....01 Health post.....02 Health center.....03 Hospital.....04 Other.....97	

Name of data collector\_\_\_\_\_ date\_\_\_\_\_ signature\_\_\_\_\_

**Thank for participating in these interview**

### 11.3 Wolaytegn version

#### Oyshaa

Lo'oo aqadi/ feyadi. Tagee sunttay \_\_\_\_\_, Tanii Duguna Fango Worada gidon yeluwa giga xaliyaagan xinatiyaa ottiya assara de'ees. Neni haxinatiyas qadani dorettadasa hegaa gishawu issi gutta daqiqqa hasittamu daqiqqa gidiyagaa tannara takassa. Negee suntaanee mottay koshenna gujwan qasii haa oshatusi neni zarido zaroyi osikaa odettenani xurran nagettes neenaka qonicssena.

Koshayi negee aymale?

Enoo .....1, chi.....2

Galatteyis enoo googishawu.

#### kifilya 1- heranne aye hanotta xelliyagaa

O #	Oyshaa	Zaruwa	O # kanitta
101	Herraa	Kattama.....1 Gexeere motta.....2	
102	Layttay woqee?	Cumetta laytta .....	
103	Kochay negge abee?	Wolayta....1 Amaraa....2 Hadiyaa.....3 haraa.....4	
104	Amanoyi	Protestanite.....1 Orthodokisse.....2 Muslimee.....3 Catholikee.....4 Haraa.....5	
105	Ossoyi	Soo Ayoo....1 Kawoo osanchaa...2 Gilee osancha...3 Haraa.....4	
106	Timiritte xekka	Tamara bekee...1 Xuffeyisine nababes....2 Koyroo xekka...3 2 <sup>nto</sup> ne bolla.....4	
107	Aginani demiyoogee	Birran_____	
108	Geluwa xelliyagan	Issino..... 1 Gelettasi..... 2 Azinayy haqoro ...3 Birisharo..... 4	
109	Kettawa ossa	Goshanicha...1 kawo ossanicha.....2	



		Gilee ossanicha.....3 Haraa.....4	
110	Kettawa timirittee Xekka	Tamaribenna .....1 Xuffesine nababess.....2 Koyro xekka.....3 2 <sup>ntto</sup> ne bolla.....4	
111	Haggapee kasse sharaa erayi?	E' ee..... 1 Chii ..... 2 E' ee gikoo aputto sharadi_____	
112	Hagappe kasee ixettan hanittara mettoti gattidona	E' ee .....1 Chii .....2 E' ee gikoo awudee Sharanni .....1 Marettan .....2 Gaccinwaan..... 3	

### Kifiliya 2- Akekka

201	Qofetti bena mettoy issi ixetta ayo sharan , marettanine gaccinwan deshin gakidi aye bollan metuwa kalletan dandayes gada qopay?	E' ee.....01 Chii .....02 Erikke .....98	208
202	<b>Ixettan</b> deshin gakanna dandayenne shara ayoo adagani ollan dandayaa payatetta metoti aybe aybe? (Ayotu zarwa ubakka malatitte.) Harashin, harashin?	Asattetara suttay gogiyoga.....01 Xellay dabidabuwa .....02 Tohoyi/kushee kixiyogaa.....03 Haraa _____ 97 (qoncisitte) Metoyi baa.....00 Erikke.....98	204
203	Issi ayaa haa metotuppe dendaggan hayiqanna dandayaa?	E' ee.....01 Chii .....02 Erikke.....98	
204	Issi ixetta ayoo <b>marettan</b> deshin gakkana danidaya baxolla metoti ayb aye? (Ayotu zarwa ubakka malatitte.) Harashin, harashin?	Asattetara suttay gogiyoga.....01 Woraccayetigaa .....02 Marettayi 12 sattepe bolla.....03 Gedoo na'aa 30 daqoqaraa wole nagga .....04 Haraa _____ 97 (Qoncisitte) Metoyi baa.....00 Erikke .....98	206
205	Issi ayaa haa metotuppe dendaggan hayiqanna dandaya?	E' ee.....01 chii.....02 erikke.....98	

206	Issi ayoo gaccinuwan deshin gakkana danidaya baxolla metoti aybe aybe? (Ayotu zarwa ubakka malatitte.) Harashin, harashin?	Asattetara suttay gogiyoga.....01 Asattetara lo'enna penoy diyoba kiyoga.....02 Bollay michyogaa.....03 Haraa _____ 97 (Qoncisitte) Metoyi baa.....00 Erikke.....98	208
207	Issi ayaa haa metotuppe dendaggan hayiqanna dandaya?	E ee.....01 chii.....02 erikke.....98	
208	Gacino na aa yelletido lapunitto galassara gakanna dandayaa baxolla mettoti aybe aybe? (ayotu zarwa ubakka malatitte.) Hararshin harashin?	Shempuwa bogiyoga/metiyoga.....01 Yiraayi keppe gutta.....02 Woracayetiyyogga/zozuu giyyogaa.....03 Yiraa bana dogiyogaa.....04 Haraa _____ 97 (qoncitte) Metoyi baa.....0 Erikke.....98	210
209	Haa metotuppe yirray haqanna danday?	E ee.....01 Chii .....02 Erikke .....98	
210	Hidotta woykoo yeluwa gigaa giyoo qalla siyaa erayi?	E ee.....1 Chii.....2	
212	Ne qoffan issi ayaa hidottas woyko yeluwa gigas iy iy gigissan bessay? (ubaa zarukka malatta.)	Payatetta kettaa gigisiyyogga.....01 Biyobba gigisiyyogga.....02 Misha gigisiyyogga.....03 Sutta imiyaa assa demiyoga .....04 Marettesisa payatetta eranicha gigisiyyogga....05 Haraa _____ 97 (qonccissa)	
213	Entte herayyi hidottas/yeluwa gigas immiyo madoy de ee? (ubaa zarukka malatta.)	E ee chii erikke Biyobba gigisiyyog.....1 .....2 ..... 98 Mishamada .....1 .....2 .....98 Haraa _____ 1 .....2 ..... 98	

### Kifiliya 3 Heraa payatetta osso ketta xelliyya

301	Issi ixetta ayaa payatteta ossanchatu hakimettu madwan maretetana dandayo awanne?	Sonna .....01 Tenna kellan.....02 Tenna xabiyyan/Hospittaliyan... ..03 Gille xenani.....04 Haraa _____ .97	Kif 4
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		Erikke.....98	→ kif 4
302	Entte heran paytetta ketta aybirra betti? (ubaa zarukaa malatitte)	Kammiyan .....01 Baluqun/parani/gariyan .....02 Tohuni .....03 Halanni ..... 04 Haraa .....97 Erikke .....98	
303	Entte herappe patetta ketta banasi ayikenna sattiya ochi? Na uu satteppe garissa gidikko daqiqan kintitte	Sattiyan .....1 <input type="checkbox"/> <input type="checkbox"/> Daqiqan .....2 <input type="checkbox"/> <input type="checkbox"/> Erikke .....98	
304	Haa patetta kettan hakammo/ossoy ayi malle?	Kehippe lo oo.....01 Lo oo.....02 Gihdoo .....03 Itta .....04 Erikke .....98	

#### Kifille 4. Ixettara gatidabatta

401	Ixetta kaluwa haa sharani kaladiy?	E ee..... 1 chii ..... 2	→ 407
402	Ixetta kaluwa apputo kaladiy?	Kalido qodda..... Erikke..... 98	
403	Woqanitta aginani daydaa ixetta kaaluwa doommadi?	Aginna..... Erikke ..... 98	
404	Ixetta kaluwa koyro onani xelletadi?	Tenna balamuyatta.....01 Tenna ekisitenshineta.....02 Heraa maretisiyagetta.....03 Shoriyoo/lagiyoo.....04	
405	Hanoo gakanawu aputte ixetta kaluwaasi badii?	Qodda..... Erikke..... 98	
406	Haa ixettani deshin paytetta osanichatti hagappe kaliy deyabbatta zoridonna? Hanittara malatatta ixetta, marottaninne gaccinuwan wodiyani? Hagettupe betiko awu banna besykonne? Awani maretana besyikonne? Biyoobaa gigisiyogaa? Misha gigisiyogaa? Sutta imiyya assa gigisiyogga? Maretisiyaa payatetta	E ee chii erikke Hanittara malatatta..... 01..... 02..... 98 Awu banaa besikonne..... 01..... 02..... 98 Awani maretan besiyakonne.. 01..... 02..... 98 biyoobaa..... 01..... 02..... 98 mishaa..... 01..... 02..... 98 sutta demiyossa ..... 01..... 02..... 98 maretisiya payatetta osanchaa..... 01..... 02..... 98	

	osanichatta gigisiyogaa?		
407	Ixetta kaluwa ayis otikiy? (zaruwa ubakka malatitte)	Awu biyakkone erike..... 01 Payatetta kettay kehippe hakiyo gishwu..... 02 Al oo gidiyoo gishwu..... 03 Tanaara biyya asi bayinna gishwu..... 04 Lo oo gidenna gishasi..... 05 Haraa ..... 97	
408	Nenii/nekettay haa marettasi gigisidobaayi deyi?	E ee..... 01 denaa..... 02 Erikke ..... 98	410
409	Ayii hiditta gigaa nenni/nee kettay ottide? (ubba zarukka malatitte.) Harashin, harashin?	Awani marettan besiyakonne..... 01 biyoobaa..... 02 mishaa..... 03 sutta demiyossa ..... 04 marettisiya payatetta osanchaa.....05 haraa .....97	
410	Awani marettansi halichadi?	sonni.....01 Tena kelani .....02 Tenna xabiyyan .....03 Hospittaliyan.....04 Haraa.....97	
411	Nenii marettanassa onne wossaniday?	Tanna..... 01 Tannanne kettawa..... 02 Shoriyo/lagiyoo..... 03 Payatetta osanichatta..... 04 Marettisiyaa hiliyoo..... 05 haraa ..... 97 (hqonicca) Erikke ..... 98	
412	Onni nena marettisiyakoo lo oo gadaa qoppay?	Payatetta ossanichati.....01 Tenna ekistenshinneti.....02 Marettisiyaa hiliyaa.....03 Shoriyo/lagiya.....04	
413	Nenaa marettissana assa onne wossaniday?	Tanna..... 01 Tannanne kettawa..... 02 Shoriyo/lagiyoo..... 03 Payatetta osanichatta..... 04 Marettisiyaa hiliyoo..... 05 haraa ..... 97 (hqonicca) Erikke ..... 98	
414	Marettasommada gaccinuwa kaluwa otutee	E ee..... 1 chii ..... 2	essaga

415	Gaccinuwa kaluwa awani otutte?	Marettisiyaa hileni soni .....01 Tenna kellani.....02 Tanna xabiyan .....03 Hospitaliya .....04 haraa.....97	
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Naqash shishidagaa sunttay\_\_\_\_\_ galassa\_\_\_\_\_ malatta\_\_\_\_\_

**Oyisha zaroo gishawu kehippe galattes!**