

BIRTH PREPAREDNESS AND COMPLICATION READINESS AND ITS ASSOCIATED FACTORS AMONG PREGNANT WOMEN IN ARBA MINCH ZURIA WOREDA, GAMMO GOFFA ZONE, SOUTHERN ETHIOPIA.



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Birth Preparedness and Complication Readiness and Its Associated Factors Among Pregnant Women In Arba Minch Zuria Woreda , Gammo Goffa Zone, Southern Ethiopia.

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ABSTRACT

Background: Preparing for childbirth and being ready for complications reduces delays in obtaining skilled maternal and neonatal care, especially during childbirth. Birth Preparedness and Complication Readiness (BP/CR) is a strategy to promote the timely use of such a care. However, it is not a common practice in developing countries like Ethiopia and the factors also vary from place to place.

Objectives: The study is aimed to determine the prevalence of BP & CR and the associated factors among pregnant women in Arba Minch Zuria Woreda.

Methods: A community based cross-sectional study was conducted among 713 pregnant women in Arba Minch Zuria Woreda in March, 08-17/2015. Using registries from HEWs in the health posts of each kebele, all pregnant women with self-reported months of pregnancy of 3 and above in the nine kebeles were listed and selected for each by using SPSS software V.20. A pretested and semi- structured interviewer-administered questionnaire was used. Data was coded, checked and entered into Epi data version 3.1 and exported to SPSS 20 statistical software for analysis.

Result: A total of seven hundred seven (99.2%) women were interviewed for the study. The prevalence of BP & CR in Arba Minch Zuria Woreda was found to be 30%. The odds of being prepared for birth and its complications was higher among women from high economic class (AOR= 2.29(1.16, 4.54), with frequency of antenatal care ≥ 4 (AOR=4.52(2.26, 9.02), who received advice on BP & CR (AOR=1.84(1.13, 3.01), and who were knowledgeable on labor and delivery danger signs (AOR=1.85(1.01, 3.44). However, those women with parity of 2 to 4 (AOR=.051(0.31, 0.84) and above four (AOR=0.51(0.31, 0.84) and those who were food insecure (AOR=0.26(0.16, 0.42) were less likely to be prepared for birth and its complications than their corresponding reference groups.

Conclusion and recommendation: The study showed that birth preparedness and complication readiness practice is inadequate in the study area. Women's economic status, parity, frequency of ANC visit, receiving of advice on BP /CR, knowledge on key danger signs during labor and delivery, household food security status showed statistically significant association with BP/CR. Enhancing BP/CR activities and Information, Education and Communications targeting the factors among pregnant women was recommended.

Key words: birth preparedness and complication readiness, food insecurity, Arba Minch Zuria Woreda

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ACRONYMS

ANC- Ante -natal care

AOR-Adjusted odds ratio

BEmONC- Basic emergency obstetric and neonatal care

BPCR- Birth preparedness and complication readiness

EDHS- Ethiopian Demographic and Health Survey

EmOC- Emergency obstetric care

EmONC- Emergency obstetric and neonatal care

FANC- Focused antenatal care

FMOH- Federal Ministry of Health

HDA- Health development army

HEW- Health extension worker

LAD- Labor and delivery

MMR- Maternal mortality rate

MDG- Millennium Development Goal

OR-Odds ratio

PMTCT- Prevention of Mother to Child Transmission

PNC- Post natal care

SBA- Skilled birth attendant

SNNPR- Southern Nations and Nationalities and People's Region

SPSS-Statistical package for social sciences

TBA- Traditional birth attendant

TTBA- Trained traditional birth attendant

UN-United Nations

UNICEF- United Nations Children's Fund

USD- United States Dollar

WHO-World Health Organization

1. INTRODUCTION

1.1 .Background

Every minute, a woman dies in pregnancy or childbirth and this adds up to more than 10 million over a generation. Almost all of these women (99 %) live and die in developing countries. A high maternal death rate is an indicator of an inadequate health care system and violation of a woman's fundamental rights to life and health. It is seen in countries where women are least likely to have skilled attendance at delivery. In sub-Saharan Africa, where most maternal deaths occur, about 70 per cent have no contact with health personnel following childbirth (1). Ethiopia is one of the countries in the world with the highest maternal mortality rate. According to the Ethiopian Demographic and Health Survey (EDHS), the maternal mortality rate (MMR) was about 676 deaths per hundred thousand live births. Only 15% percent of births in Ethiopia are delivered at a health facility. Even though there is a two-fold increment in the proportion of women who gave birth in health facilities in SNNPR from 2011 to 2014, it is still one of the lowest in Ethiopia (2, 3).

Ensuring skilled attendance at all births, backed by emergency obstetric care when needed, would reduce maternal deaths by about 75 per cent. One suggested approach for increasing coverage of skilled delivery care is the inclusion of birth plans in routine ANC. Birth preparedness and complication readiness is defined as strategy 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. A birth plan or emergency preparedness plan includes identification of the following elements: the desired place of birth; the preferred birth attendant; the location of the closest appropriate care facility; funds for birth-related and emergency expenses; a birth companion; support in looking after the home and children while the woman is away; transport to a health facility for the birth; transport in the case of an obstetric emergency; identification of compatible blood donors in case of emergency (1,4,5).

A number of countries in sub-Saharan Africa have adopted WHO's focused antenatal care model which promotes birth plans as a strategy for improving women's health seeking behaviors for timely and appropriate care during pregnancy, labor, delivery and the postnatal period. Ethiopia is also one of these countries which started using the model (4,6).

1.2. Statement of the problem

Many of the complications that result in maternal and perinatal deaths are unpredictable, and their onset can be both sudden and severe. Delay in responding to the onset of labor and such complications has been shown to be one of the major barriers to reducing mortality and morbidity surrounding child birth. Making a birth plan before and during pregnancy has shown to facilitate a feeling of self-control and autonomy for pregnant women which in-turn have shown a positive impact on pregnancy and birth outcomes (4)

Women and newborns need timely access to skilled care during pregnancy, childbirth, and the postpartum/newborn period. Too often, however, their access to care is impeded by delays—delays in deciding to seek care, delays in reaching care, and delays in receiving care. These delays have many causes, including logistical and financial concerns, unsupportive policies, and gaps in services, as well as inadequate community and family awareness and knowledge about maternal and newborn health issues (7).

Lack of advance planning for use of a skilled birth attendant for normal births, and particularly inadequate preparation for rapid action in the event of obstetric complications, are well documented factors contributing to delay in receiving skilled obstetric care. Birth Preparedness and Complication Readiness (BP/CR) is a strategy to promote the timely use of such a care (5).

The MMR in developing regions [230] was 14 times higher than in developed regions [16]. While none of the MDG regions had extremely high MMR, sub-Saharan Africa was the only MDG developing region with very high MMR [510]. Ethiopia is one of the ten countries that comprised 58% of the global maternal deaths reported in 2013 which accounts for about 13,000(4%) of global maternal deaths. However, the country is making progress towards the achievement of MDG 5 with MMR of 420 per 100,000 live births. In Ethiopia, like in many developing countries, the causes of maternal deaths are mainly attributed to the three delays; that is delay in seeking care, delay in reaching appropriate care and delay in receiving care (8,9).

Existing studies from different parts of the world like India(10),Nigeria(11), Central and East Africa(12-14) and in Ethiopia(15-18) showed that the factors known to have association with birth preparedness and complication readiness among women include the following: socio-demographic factors like age, religion, occupation, educational status, marital status, monthly income, experience of reading newspaper or magazine and other factors related to reproductive health like role of husbands, parity, having received at least one ANC in the last pregnancy, knowledge on key danger signs during pregnancy, labor and child birth, the post-partum period ,history of still birth, advice on BP/CR during ANC ,presence of ANC follow up, frequency of ANC visit, previous place of delivery for the last delivery, and being pregnant for the first time.

Birth preparedness and complication readiness is not a common practice in many developing countries including Ethiopia. For example, 49.4% in West Bengal India, 24.7% in Northern Nigeria (11-14). In Ethiopia, 22.0 % of women in Adigrat Town, 29.9% and 16.5% in Bale and Arsi Zones, Central Ethiopia respectively and 17% in Southern Ethiopia Aleta Wondo Woreda of Sidama Zone were prepared for birth and its complications (15-18).

According to the nationwide road map for accelerating the reduction of maternal and newborn morbidity and mortality, one of the main strategies for the reduction of maternal mortality in Ethiopia is increasing community awareness of complication readiness, birth preparedness, and the availability of basic, comprehensive emergency obstetric care (BEmOC) (19). The Government of Ethiopia is committed to achieve the MDG 5 to improve maternal health, with a target of reducing maternal mortality ratio by three-quarters over the period 1990 to 2015. Accordingly, the FMOH has implemented multiple high impact interventions so that to address the 3 known delays. In order to address the first delay, HDAs were organized and mobilized to promote behavioral change and all health extension packages were implemented in the communities so that they can produce and sustain their own health, including maternal health. To solve the shortage of transportation facilities about 812 ambulances have been already distributed to provide the needed service at Woreda level. Furthermore, in order to address the issue of financial barriers, a free maternity service has been given both at health center (HC) and hospital level. The government has also increased efforts on ensuring implementation of the birth preparedness and complication readiness by introducing focused antenatal care (FANC) which emphasizes counseling of women on the elements of this strategy(20).

However, according to EDHS 2011, the three successive survey reports showed no evidence to suggest that the estimated maternal mortality ratio decreased in Ethiopia between 2000 and 2011. Delivery assisted by skilled providers is the most important proven intervention in reducing maternal mortality and one of the MDG indicators to track national effort towards safe motherhood. Skilled assistance at delivery increased from 6 percent to 15 percent in the last fifteen years (2, 3). This negligible decline in maternal mortality ratio and increase in institutional delivery in the successive EDHS reports might be due to the low use or non-use of birth preparedness and complication readiness strategies recommended by the WHO focused ANC guideline. This might be particularly true for SNNP region which was one of the regions with the lowest proportion of births assisted by a skilled provider (3).

An important contributor to good pregnancy outcome is the nutritional status of the mother, which is a factor of adequacy or otherwise of the dietary intake in pregnancy. Household food security is a determinant of adequate dietary intake and it is a major and ever worsening problem in Ethiopia ((21, 22). In addition to its direct effect on pregnancy outcomes, different literatures showed that household food insecurity has also shown statistically significant association with health care utilization like antenatal care and accessing skilled delivery care(23,24,25). Hence, these negative effects may be understood through the concept of competing priorities. People may choose to place limited financial resources or time in food or housing before they do so in health care. Difficulty in obtaining basic necessities, such as food, has been shown to impair access to health care in homeless populations and among persons with HIV infection (24). Since pregnant women are also vulnerable groups of the community, they may also be obliged to choose spending limited financial resources or time in food or housing than striving to get the necessary health care whenever they are in food insecure conditions. One of such effects would be operating through preparing for birth and its complications. However, as to the researchers knowledge there is no evidence which supports the association between birth preparedness and household food security in Ethiopia in general and in the study area in particular. Therefore, this study tries to fill this gap and also the prevalence of birth preparedness and complication readiness in Arba Minch Zuria Woreda , Gammo Goffa Zone ,Southern Ethiopia.

2. LITERATURE REVIEW

2.1. Introduction

Like all other life events, childbirth is a normal physiological process for the majority of women and it is looked upon with a mixture of anticipation and happy expectation. Having appropriately skilled health professional during labor, birth and the period immediately afterwards was the mystery behind the success of countries with maternal mortality ratio below 100 per 100,000 live births. Birth preparedness and complication readiness reduces delays which could cause fatal complications associated with pregnancy, child birth and the postnatal period (5).

2.2. Prevalence of birth preparedness and complication readiness (BP and CR)

A study conducted in a rural community in Bankura district, West Bengal, India, among 240 women who delivered in last 12 months showed the overall BP/CR index of 49.4%. In the study, 84.6% saved money for childbirth, 90.0% had institutional delivery, and 12.9% identified blood donor. A related study in Burkina Faso, Koupela District showed that 46.1% had a plan for transportation, and 83.3% had a plan to save money. In a similar study in Northern Nigeria, most (63.5%) made at least one preparation for their child's birth (e.g., setting aside money for transportation and any other costs associated with delivery, clean clothes for the baby) and only 10.7% having a SBA at a health facility (10-12).

Studies in East Africa, Mpwapwa district in Tanzania and Mbarara District of southwest Uganda showed that about 86.2% and 53.9% of women who became pregnant and or gave birth two years preceding the survey and women who gave birth recently were prepared for birth and its complications respectively. Majority (68.1%) of the women planned to be delivered by skilled attendant. One third of the women planned to deliver at home in the absence of a skilled birth attendant. In the Ugandan study on the association between mass media exposure and BP/CR, birth preparedness actions included were money saved (87.8%), identified SBA (64.3%), identified transport (60.1%), and purchased childbirth materials (20.7%). Women who had taken three or more actions were coded as well birth prepared (53.9%). On the other side, birth preparedness activities are relatively very low in Ethiopia where only about 22% of women who gave birth in the last 12 months preceding a community survey in Adigrat Town, Tigray region, Northern Ethiopia were prepared for birth and its complications taking into account place of delivery identification, means of transportation and saving money (13-15).

Similar studies in different parts of the country also revealed a low proportion of birth preparedness and complication readiness practices among women. About 29.9% ,16.5%, and 17% of women in Goba Woreda of Oromia region, South East Ethiopia(women of child bearing age) , Robe Woreda, Arsi Zone, Central Ethiopia(women who gave birth in the last 12 months), and Aleta Wondo District ,Sidama Zone ,Southern Ethiopia(pregnant women) were prepared for birth and its complications respectively. In the study among 743 Pregnant Women in Aleta Wondo District, only a quarter (20.5%) of pregnant women identified skilled provider. Only 8.1% identified health facility for delivery and/or for obstetric emergencies. Preparedness for transportation was found to be very low (7.7%). Considerable (34.5%) number of families saved money, only few (2.3%) identified potential blood donor in case of emergency. Majority (87.9%) of the respondents reported that they intended to deliver at home, and only 60(8%) planned to deliver at health facilities. Overall only 17% were well prepared (19-21).

2.3. Factors affecting Birth Preparedness and Complication Readiness

2.3.1. Socio-demographic factors

In the study conducted among women in rural community of West Bengal, India, working women and women of high-risk age group, Muslim religion, and lower educational status had lower BPCR index (10).Educational status also showed a statistically significant association in the studies conducted in Nigeria, Tanzania and Ethiopia . In the study in Tanzania women with primary education and above were twice more likely to be prepared and ready for birth and its complications. In the study conducted in Northern Ethiopia, Adigrat town preparation for birth and its complication was about twice higher among literate mothers than their illiterate counterparts(OR= 2.11, 95% CI= 1.17, 3.80) (11-15). Similarly in the study on birth preparedness and complication readiness in Goba Woreda, Oromia region, South East Ethiopia women who attended up to primary education were more than three times more likely to be prepared for birth and its complications than their illiterate counterparts (AOR = 3.24, 95% CI = 1.75, 6.02).The study on birth preparedness among women who gave birth recently in Robe Woreda ,Arsi Zone central Ethiopia also revealed a similar finding where preparation for birth and its complication was more than 6 times higher among educated mothers (AOR = 6.23, 95% CI = 1.5, 25.87).In this study women with monthly income greater than 716 Ethiopian Birr were about two times more likely to be prepared for birth and its complications than women with less than 716 Birr (AOR = 1.94, 95% CI = 1.01, 3.87)(16,17) .

Marital status also showed an association with Birth preparedness and complication readiness in the Adigrat study in Northern Ethiopia where married women were about 6 times more likely to be prepared for birth and its complications than their unmarried counterparts (AOR= 5.69, 95% CI= 1.67, 19.38). Exposure to mass media also showed a statistically significant association with Birth Preparedness and complication readiness in the study conducted in Uganda where women who read newspapers were about twice more likely to be birth prepared (adjusted OR 2.2, 95% CI 1.5-3.2). However, high media exposure, i.e. regular exposure to radio, newspaper, or television, showed no significant association with birth preparedness (adjusted OR 1.3, 95%CI 0.9, 2.0) (14,15).

2.3.2 Obstetric history and ANC experience of women

In the study in North Nigeria Umia state the factors that affect BP/CR included the role of husbands and parity Similarly in the Adigrat study in Northern Ethiopia women with parity range of 2 to 4 were about 2.5 times more likely to be prepared for birth preparedness and complication readiness than women in the parity range of one(AOR= 2.53, 95% CI= 1.17, 5.44).In the study , women with history of still births were more than four times more likely to be prepared than those having no history of still birth (OR= 4.41, 95% CI= 1.68, 11.59) and those who were advised about birth preparedness during their antenatal care follow up were about two and half times more likely to be prepared for birth and its complications (OR= 2.65, 95% CI= 1.66, 4.23) (15, 26).

On the other side ,in the study conducted among pregnant women in Aleta Wondo Woreda of Sidama Zone ,South Ethiopia women who became pregnant for the first time were about seven times more likely to be prepared than women with high order pregnancies (AOR = 6.82, 95% CI; 1.27–36.55). In the same study, women who attend ANC were about two times more likely to be prepared for birth and its complications than those who do not attend ANC services (AOR = 1.91, 95% CI; 1.21–3.01) . ANC visit also showed a statistically significant association with birth preparedness and complication readiness in the studies in Nigeria, central and South East Ethiopia .In the study in Northern Nigeria , having received at least one ANC in the last pregnancy was the only significant predictor of making preparations for delivery, which increases the odds of making preparations by 3.58 times.A similar finding was there among women in Goba (South East Ethiopia) and Robe(central Ethiopia) woredas where women who received ANC were about eight and six times more likely to be prepared than those who didn't

receive ANC respectively (AOR = 8.07, 95% CI = (2.41, 27.00), and (AOR = 5.68, 95% CI = 1.27, 25.4). In the later study, women who had given birth at health facility before their last delivery (AOR = 3.9, 95% CI = 2.04, 7.46) were also about three times more likely prepared for birth and its complications (11,16-18).

2.3.3. Knowledge of women on obstetric danger signs

Knowledge of women on obstetric danger signs has shown a statistically significant association with birth preparedness and complication readiness among women in the studies conducted in Tanzania, South East and central Ethiopia. In the study conducted in Tanzania women who knew ≥ 3 obstetric danger signs were 3 times more likely to be prepared for birth and its complications. Women with knowledge on key danger signs during pregnancy and the postpartum period were about twice more likely to be prepared for birth and its complications in the study conducted in Goba, South East Ethiopia (AOR = 1.74, 95% CI = 1.06, 2.88) (AOR = 2.08, 95% CI = 1.20, 3.60) respectively. Similarly, women with knowledge of obstetric complications were about 3 times more likely to be prepared for birth and its complications in the study conducted in Robe Woreda Arsi Zone, Central Ethiopia (AOR = 2.94, 95% CI = 1.61, 5.37) (13,16,17).

2.3.4. Household food insecurity and its connection with BPCR

Food insecurity is defined as a condition in which when people do not have physical, social, and economic access to sufficient, safe and nutritious foods that meet their dietary needs and food preferences for active and healthy life. Food insecurity is a major and ever worsening problem in Ethiopia. Poverty, food security, and universal access to healthcare are linked through multiple pathways. Improvement in one will have spill-over effects on the other two. Links between food security and sexual and reproductive health is less explored (22, 27-29). Food insecurity might have particular importance for women during pregnancy due to the fact that nutrient demands are higher, the effort required for food preparation may be more difficult, and pregnant women may be obliged to leave the workforce, especially in later pregnancy, which leads to financial strain (30).

One of the delaying factors in decision making at home or delays in seeking care for health facility delivery is food and financial insecurity (20). A qualitative study on barriers to utilization of institutional delivery services in Moroto and Napak districts, Uganda revealed that one of

the main barriers to utilization of maternal health services were perceived to be: insecurity, poverty, lack of food at home and at health facilities (31).

It has been evident that in food insecure situation health care service tends to be forfeited as people make gaining access to food their primary activity and use different coping strategies. A study conducted among low-income Americans on food insecurity as barriers to health care revealed that food insecurity was independently associated with postponing needed medical care (AOR= 1.74, 95% CI 1.38 to 2.21) . As a coping strategy, persons confronted with competing demands on their limited resources may prefer obtaining food than attending to health care needs (26). House hold food insecurity affects pregnancy outcomes not only in a direct pathway but also through influencing the utilization of healthcare services and facilities. A study among women who were randomly selected from catchment areas of 157 facilities offering PMTCT services in five provinces in Zimbabwe revealed that food insecurity with hunger is inversely associated with ANC attendance, facility delivery (27). Since BP/CR is an antecedent activity for institutional delivery, there are indirect and opportunity costs that could deter pregnant women from preparing for birth and its complications in food insecure situations.

Existing literatures from different parts of Ethiopia showed that birth preparedness and complication readiness is not a common practice despite the high MMR and low skilled delivery practice in the country. Moreover, most of the studies on birth preparedness and complication readiness in the country were conducted among postnatal mothers and women in reproductive age group and hence there is inadequacy of evidence on the prevalence of birth preparedness and complication readiness and its associated factors among pregnant women as they are the right targets for the implementation of the strategy. However, as to the researchers knowledge there is no study that documented the association between food insecurity and birth preparedness and complication readiness in the study area and elsewhere in the country. Hence, this study tries to fill this gap and also considers additional factors like exposure to mass media which have shown a statistically significant association in other countries.

3. SIGNIFICANCE OF THE STUDY

Pregnant women are the primary target populations for birth preparedness and complication readiness .However; studies on the magnitude of birth preparedness and complication readiness are inadequate among pregnant women.

This study will contribute to policy makers in health on the important factors which determine birth preparedness and complication readiness among pregnant women as there is inadequate evidence both in the country and SNNPR so that better achievements in the reduction of maternal mortality can be made through increased skilled attendance of births. The study will also contribute to the knowledge base whether nutritional factors like food insecurity have association with birth preparedness and complication readiness or not.

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The findings will also be helpful to local health administrators and managers to develop plans based on the consideration of the factors which affect birth preparedness and complications readiness in the study area. Moreover, the study will also provide a base line data for future studies on the area.

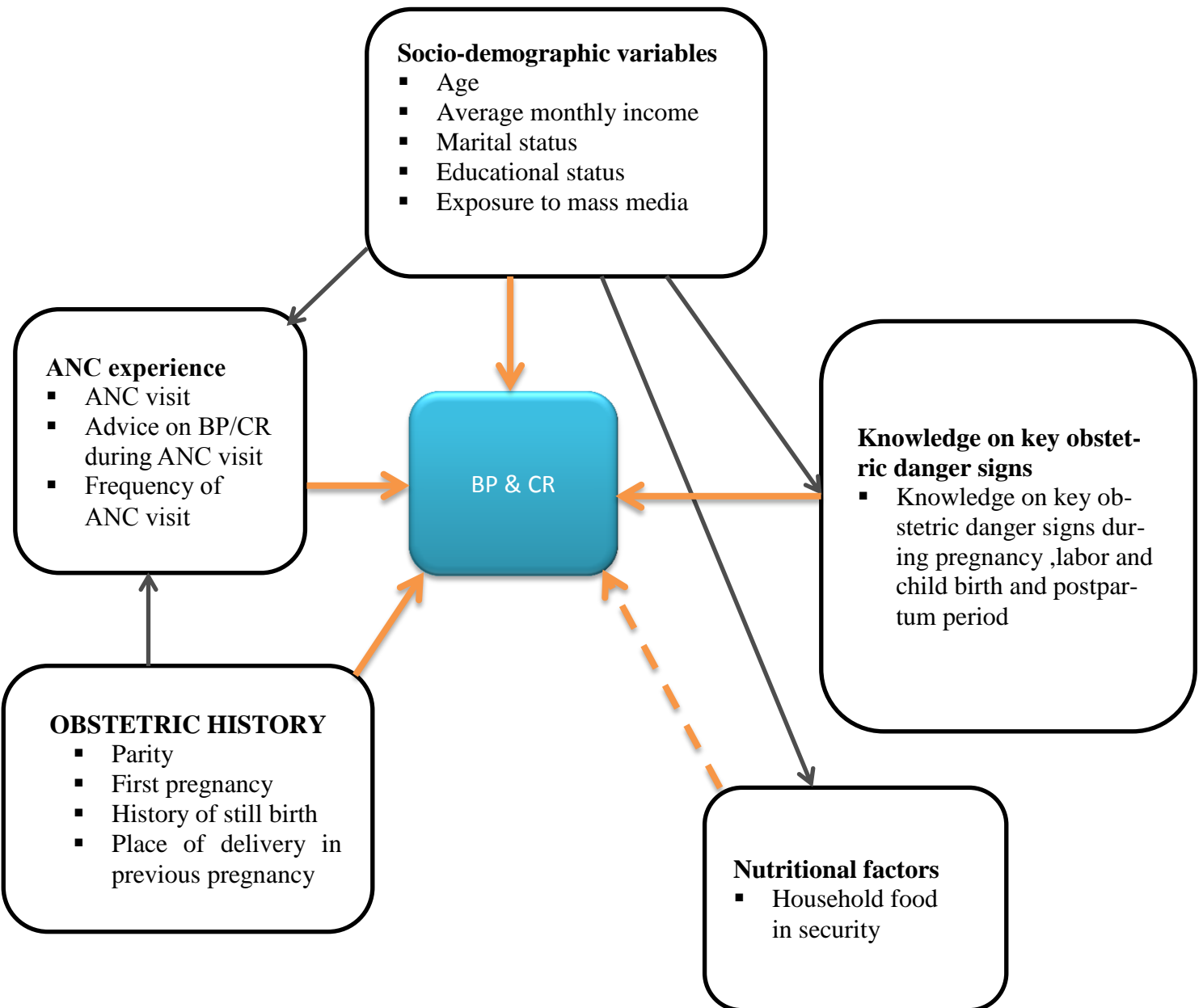


Figure 1-conceptual frame work adapted from literatures

BP& CR = Birth preparedness and complication readiness s

4. OBJECTIVES

4.1. General objective

- To determine the prevalence of birth preparedness and complication readiness and the associated factors among pregnant women in Arba Minch Zuria Woreda.

4.2. Specific objectives

- To determine the prevalence of birth preparedness and complication readiness among pregnant women in Arba Minch Zuria Woreda in March 2015.
- To identify the factors associated with birth preparedness and complication readiness among pregnant women in Arba Minch Zuria Woreda in March, 2015.

5. METHODS AND MATERIALS

5.1. Study Area and period

The study was conducted in Arba Minch Zuria Woreda which consists of 29 rural kebeles. According to the Woreda's health office report, the total population of Arba Minch Zuria Woreda projected for the year 2007 E.C is 205,204. Pregnant women in the woreda are estimated to be about 7101. The district has 6 health centers and 37 health posts. The annual report in the year 2006 E.C showed that births attended by skilled health personnel were only 19%, and there was no kebele in the woreda declared as 'home delivery free' and only two health centers (33%) had BEmONC services. The Woreda's main town is Arba Minch which is the capital town of Gammo Goffa zone. It is located 505kms far to the south of Addis Ababa (33).The study was conducted from March 08-17, 2015.

5.2. Study design

A community- based cross-sectional study design employing both quantitative and qualitative methods of data collection.

5.3. Source population

All pregnant women living in Arba Minch Zuria Woreda

5.4 Study population

Pregnant women who were randomly selected from the 9 selected kebeles in Arba Minch Zuria Woreda.

5.5. Inclusion criteria

- All pregnant women with a self-reported pregnancy of greater than or equal to 3 months who are randomly selected.

5.6. Exclusion criteria

- Women who were seriously sick or unable to give information to the data collector.
- Women who lived in the study area for less than 6 months.

5.7. Sample size

To determine the sample size, the following standard single population proportion formula was used.

$$n_0 = \frac{Z_{\alpha/2}^2 P(1-P)}{d^2}$$

where , n_0 = initial sample size obtained by using the above estimation formula

$Z_{\alpha/2}$ = is confidence level, i.e. 1.96 at 95% confidence level.

P = is the 17% proportion of birth preparedness in women from Aleta Wondo Woreda of Sidama Zone, SNNPR (18).

d = is margin of error to be tolerated and taken as 4% because of the low proportion p of birth preparedness.

n_f = final sample size

$$\text{Therefore, } n_0 = \frac{Z_{\alpha/2}^2 P(1-P)}{d^2} = \frac{1.96^2 * (0.17)(0.83)}{(0.04)^2} = 339$$

Since the estimated total number of pregnant women in Arba Minch Zuria Woreda was **7101** which is less than **10,000**, the following finite population correction formula was used.

$$n_f = \frac{n_0}{1 + \left(\frac{n_0}{N}\right)} = \frac{339}{1 + \left(\frac{339}{7101}\right)} = 324.$$

Hence with consideration of 10% non-response rate and design effect of 2, the total sample size was **713**.

5.8. Sampling procedure

There are a total of 29 rural kebeles in Arba Minch Zuria Woreda (**33**). Pregnant women in the woreda are estimated to be about 3.46% of the total population (3.46% is a conversion factor for estimated number of pregnancies for SNNPR). To identify the study units, nine kebeles were selected from the 29 kebeles by using simple random sampling lottery method. The estimated number of pregnant women for each kebele was obtained by multiplying the total population of the kebele by 3.46%. The sample was proportionally allocated to each kebele by multiplying the total sample size by the proportion of estimated number of pregnant women in each kebele out of the total number of estimated pregnant women in the nine selected kebeles. Then using family folder in the health posts of each kebele, pregnant women were listed in each kebele. From the list, the required number of pregnant women in each kebele was selected randomly by using SPSS V.20 (**Figure2**).

For the qualitative design, non-probabilistic purposive sampling technique was used to obtain homogenous groups for each category (husbands, TBAs, and health professionals).

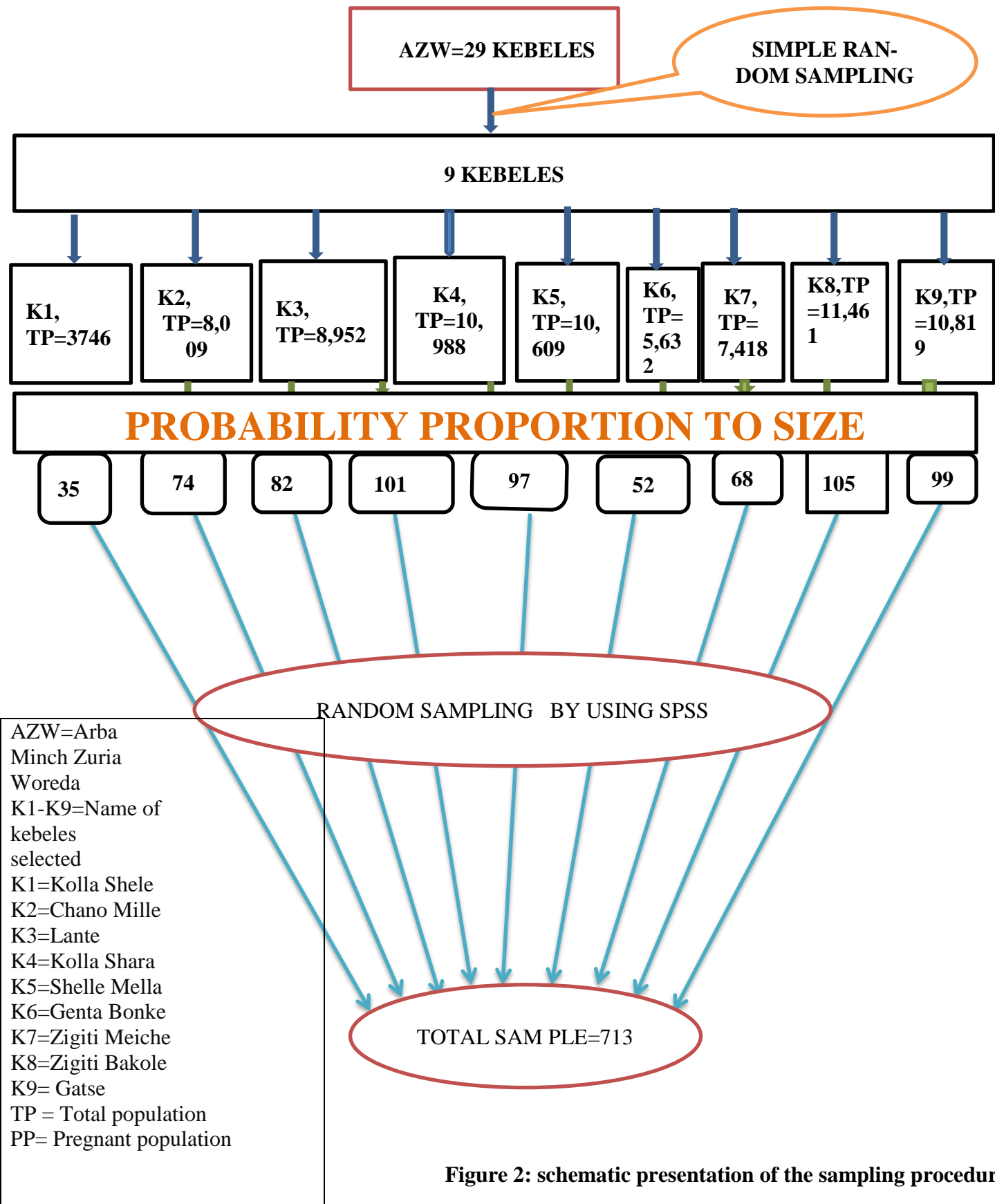


Figure 2: schematic presentation of the sampling procedure

5.9. Study Variables

5.9.1 Outcome variable

Birth preparedness and complication readiness

5.9.2. Independent variables

Socio-demographic characteristics of the respondents

- Age,
- Marital status,
- Educational status,
- Average monthly income/socio-economic/wealth status,
- Exposure to mass media,
- Occupation

Obstetric history and ANC experience of the respondents

- Parity,
- knowledge on key danger signs during pregnancy,
- knowledge on key danger signs during labor/child birth
- knowledge on key danger signs during the postpartum period,
- History of still birth,
- History of abortion,
- Advice on BP/CR during ANC,
- ANC visit,
- Previous place of delivery for the last delivery,
- Being pregnant for the first time

Nutritional factors

- *Household food insecurity*

5.10. Data collection method and procedure

5.10.1. Quantitative

A total of 7 data collectors were recruited for data collection. The data collectors were public health nurses at diploma level who were working in the Woreda .Two health officers were recruited for supervision of the data collection. A day long intensive training was given on the data collection methods to the data collectors and supervisors. The data collectors and the supervisors were clearly briefed about the purpose of the research and how to conduct the survey on the sampled subjects.

The details of the training focused on clarification of the problem, the significance of the study for public health practice, objectives, methodology with particular emphasis on how to conduct the survey and measurement, and on every section of the instrument for data collection. An interactive lecture followed by group discussion on the data collection procedures; measurement of variables and the elements of the questionnaire were conducted by the investigator and a facilitator. During the data collection period, the data collectors and supervisors were guided by health development army leaders in each kebele so that they can easily access the houses of each sampled pregnant woman. A pretested, semi-structured, interviewer-administered questionnaire was used. Hence, to assess birth preparedness and complications readiness a questionnaire partly adapted from the survey tools developed by JHPIEGO Maternal and Neonatal Health program(5) was used and for the household food insecurity the standard Household Food Insecurity Access Scale (HFIAS) questionnaire by Food And Nutrition Technical Assistance(FANTA III) (34) was used. The questionnaire was first prepared in English and then translated to the local language Gammotho and was retranslated back to English language by another person having skills in both of the languages to realize validity of the questionnaire. No names or identifiers were included on the questionnaire. Each public health nurse who collects the data was assigned out of his/her working kebele so that deliberate amendments of the data can be avoided. The data collectors were given the list of the pregnant women to be interviewed in their respective kebeles in advance.

5.10.2. Qualitative

Unstructured open ended and non-directive focus group discussion (FGD) guide was designed in order to triangulate responses obtained from the quantitative survey. Among the major variables thought to affect the harmony of the discussion were sex, TBAs and health professionals were taken as categorizing criteria. Accordingly, a total of six FGDs were formed in a group of husbands of pregnant women, TBAs and health professionals. Each of the groups consisted eight to twelve members as recommended by the WHO. The principal investigator moderated the discussion of health professionals, while the TBAs and the husband's group were moderated by an experienced health officer working in the woreda with respect to note takers and/or assistances during the discussion were identified. A day long training and practical exercise was carried out before the commencement of the data collection. Group discussions with their respective discussants were conducted in a quiet kebele hall and health centers. Each discussion was tape recorded not to miss all issues discussed, and finally the principal investigator transcribed the tape recorded after each section, translated and interpreted. Although, diverse

opinions were expressed with in each group, preliminary coding of transcripts was done and consistent theme that are directly related to the objectives of this study were identified.

5.11. Operational definitions and definition of terms

- Woreda: refers to an administrative level corresponding to district in other parts of the world.
- Illiterate: refers to those women who were not able to read and write.
- Pregnant woman: A woman who claims to be in pregnancy state of greater than or equal to three months.
- A woman was considered as prepared for birth and its complication if she reported that she identified health facility for delivery (health center/hospital), saved money, identified skilled provider at birth and identified a means of transport to place of childbirth or for the time of obstetric emergencies ahead of childbirth. Those mothers who followed at least three of the four BP/CR components were considered as “well prepared for birth and its complication”. The remaining women were considered as “not well prepared for birth and its complications”.
- A woman was considered knowledgeable on key danger signs of pregnancy, if she can mention at least two of the three key danger signs for pregnancy (vaginal bleeding, swollen hands/face and blurred vision) spontaneously(16).
- A woman was considered knowledgeable on key danger signs of labor/childbirth, if she can mention at least three of the key four danger signs for labor/childbirth (severe vaginal bleeding, prolonged labor (>12hours), convulsion and retained placenta) spontaneously(16).
- A woman was considered knowledgeable on key danger signs of postpartum, if she can mention at least two of the three key danger signs for postpartum (severe vaginal bleeding, foul-smelling vaginal discharge and high fever) spontaneously(16).
- A food secure household experiences none of the food insecurity conditions like not having enough food, unable to eat preferred foods, eating a more monotonous diet than desired or just experiences worry, but rarely(34).
- A mildly food insecure household worries about not having enough food sometimes or often, and/or is unable to eat preferred foods, and/or eats a more monotonous diet than desired and/or some foods considered undesirable, but only rarely. But it does not cut back on quantity nor experience any of three most severe conditions (running out of food, going to bed hungry, or going a whole day and night without eating)(34).

- A moderately food insecure household: eats a monotonous diet or undesirable foods sometimes or often, and/or has started to cut back on quantity by reducing the size of meals or number of meals, rarely or sometimes. But it does not experience any of the three most severe conditions (34).
- A severely food insecure household: Any household that experiences one of these three conditions (running out of food, going to bed hungry, or going a whole day and night without eating) even once in the last four weeks (30 days) (34).
- Food insecure households: Households with mild, moderate and severe food insecure conditions.

5.12. Data analysis

Data was entered in to Epi-data V3.2, cleaned, edited and then exported to SPSS version 20 statistical package for analysis and was cleaned for inconsistencies and missing values. Descriptive statistics using frequencies, percentages, mean, and standard deviations was used to describe findings. Cross-tabulation between each explanatory variable and the outcome variable was conducted and the fulfillment of assumptions of Chi-square was ascertained. Bivariate analysis using logistic regression was done for the variables which fulfill the assumptions for chi-square and all explanatory variables which have association with the outcome variable at p value of less than 0.25 were selected as candidates for multivariable analysis. Multicollinearity between the candidate variables was checked. Then multivariable analysis using backward stepwise selection method was done to control for possible confounding variable and to determine presence of statistically significant association between explanatory variables and the outcome variable at P value < 0.05 and OR with 95% CI was used to measure the degree of association between independent variables and the outcome variable. Model fitness was checked using Hosmer and Lemeshow goodness of fitness test. The variables with a P-value less than 0.25 in the bivariate analysis (Age, educational status, marital status, occupation, ever listened to the radio, history of still birth, and place of delivery for the last birth, knowledge on pregnancy, and post-partum danger signs) did not show a statistically significant association in the final multivariable logistic regression analysis model. History of abortion was not included in the multivariable logistic regression because of P-value greater than 0.25 (p-value=0.715) in the bivariate analysis. Factor analysis was conducted to set wealth/economic status of pregnant women. A total of 24 items were entered for a reliability analysis and 13 items together had a cronbach's alpha of 0.7 and above. These items were analyzed using principal component analysis method for factor analysis. The fulfillment of assumptions for

principal component analysis was assessed using Kaiser-Meyer-Olkin Measure of Sampling Adequacy of greater than or equal to 0.6 and significance of Bartlett's Test of Sphericity at p-value of less than 0.05. In each step variables with anti-image correlations and communalities less than 0.5, having a loading (correlations higher than 0.4) in more than one component (having complex structure), and a single variable loading in a component were removed. The total variance explained by a single component was 66.13%. A factor score of this component was used to classify women's wealth status into 4 groups (quartiles). The qualitative data was compiled and summarized into themes manually. Finally, the findings were presented in narrative ways by triangulating with quantitative data.

5.13. Data quality management

The quality of data was assured by proper designing and pre-testing of the questionnaire, proper training of the interviewers and supervisors of the data collection procedures. Every day, 10% of the completed questionnaires were reviewed and checked for completeness and relevance by the supervisors and principal investigator and the necessary feedback offered to data collectors in the next morning before the data collection begins. For the qualitative the kebele administrators, health administrators, and the supervisors, with principal investigator were used to identify eligible discussants. The principal investigator and supervisors made supervision on the data collection process. The English version questionnaire was translated to the local language (Gammotho) by a person having knowledge of both of the languages. Then another individual who has very good knowledge of both English and Gammotho language translated the Gammotho version back to English to check for its original meaning.

The questionnaire was pre-tested on a kebele that had similar characteristics with the study population other than the sampled cluster in the study area. One kebele (Chano Dorga) was selected for this purpose. A total of 36 respondents (5% of sample size) were interviewed. Findings were discussed among data collectors, supervisors and the investigator in order to ensure better understanding to the data collection process. Based on the pretest, questions were revised, edited, and those found to be unclear or confusing were modified. Finally, a semi-structured Gammugna version questionnaire was used for data collection. Each woman was interviewed in a separate private place to avoid social desirability bias.

5.14. Ethical consideration

Ethical clearance was obtained from Jimma University Ethical Review Committee. A formal letter of permission to conduct the study was obtained from Gammo Goffa zone Health Desk and subsequently to Arba Minch Zuria Woreda Health office where the study takes place. Verbal Consent on willingness to participate in the study was obtained from the study subjects and subjects were informed that the data will be kept confidential.

5.15. Plan for data dissemination and utilization of findings

The findings of this study will be presented to the Jimma University scientific community and will be submitted to college of health sciences, department of population and family health. The findings will also be communicated to the local health planners and other relevant stakeholders in Gammo- Goffa zone and Arba Minch Zuria Woreda so that possible improvements can be made on the recommended areas. Further presentation in scientific forums and publication on scientific journals will be attempted.

6. RESULT

In this study a total of 707 pregnant women with a self-reported pregnancy of three months and above were interviewed from the randomly selected kebeles in Arba Minch Zuria Woreda comprising a response rate of 99.2%.

6. 1. Socio-demographic characteristics of the study participants

Four hundred seventy three (66.9%) of the respondents were in the age group of 20-34 years, with a mean age of $27.2 \pm (5.5)$ years. Out of the total respondents 434(61.4 %) were protestants and 262(37.1%) were Orthodox Christians. Regarding their marital status, 676 (95.6%) were married and the remaining few 31(4.4%) were not in a marital union. Six hundred sixty one 661 (93.5%) were living with their partner and the rest 46(6.5%) were not. Around half of the study participants were house wives 338(47.8%) followed by farmers 249 (35.2%). Gammo is the most dominant ethnic group in the study area 572(80.9%) followed by Wolaita 97(13.7%).Two hundred fifty four (35.9%) of the respondents were illiterate and more than one third 287(40.6%) of them attended primary school level education. With consideration of women's wealth status in quartiles 230(32.6%) of women had high wealth status. More than half 370 (52.3%) of the study participants ever listened to the radio. Among those ever listened to the radio, half 186(50.3%) listened almost every day(**Table 1**)

Table 1: Socio-demographic characteristics of pregnant women in Arba Minch Zuria Woreda, Gammo Goffa Zone, SNNPR, March, 2015.

Variable	Category	Frequency (%)
Age of women(N=707)	less than 20	89(12.6)
	20-34	473(66.9)
	35 and above	145(20.5)
	Mean \pm SD	27.2 \pm 5.5
Religion(N=707)	Protestant	434(61.4)
	Orthodox	262(37.1)
	Others*	11(1.6)
Marital status(N=707)	In marital union	676(95.6)
	Not in marital union \oplus	31(4.4)
Living with a partner(N=707)	Yes	661(93.5)
	No	46(6.5)
Ethnicity(N=707)	Gammo	572(80.9)
	Wollaita	97(13.7)
	Zeise	17(2.4)
	Others**	21(3.0)
Occupation(N=707)	House wife	338(47.8)
	Farmer	249(35.2)
	Others***	120(17.0)
Educational status(N=707)	Illiterate	254(36.0)
	Read and write	71(10.1)
	Primary education	287(40.7)
	Secondary education and above	95(13.4)
Wealth status(N=705)	Low	203(28.8)
	Low-medium	149(21.1)
	Medium-high	123(17.4)
	High	230(32.6)
Ever listen to the radio(N=707)	Yes	370(52.3)
	No	337(47.7)
Frequency of listening to the radio(N=370)	Almost every day	186(50.3)
	Once in a week	158(42.7)
	Less than once in a week	26(7.0)

*=Muslims, no religion **=Amhara, Guragie, Oromo ***= government employees, students, daily labors, merchants \oplus = single, divorced, separated, widowed.

6.2. Obstetric characteristics and antenatal experience of the study participants

About a third of the women were pregnant before the age of 18 years and 451(63.80%) were above 18 years of age when they were first pregnant with mean age at first pregnancy being $20.2 \pm (2.9)$. Sixty two (8.8%) of them do not know their age at first pregnancy. Majority of the women 588(83.20%) were pregnant twice and above. Regarding parity of the women, more than half 332(56.90%) of the women with previous pregnancies had parity of two to four. Among women with previous pregnancies 114(19.40%) and 70(11.91%) had ever had abortion and still birth respectively. More than half 338(57.5%) of the pregnant women with previous pregnancies gave their previous birth at home. Almost all births 338(57.5%) at home were attended by relatives or care takers /TBAs, 164(27.9%) were assisted by health extension workers, and 86(14.6%) were assisted by midwives, nurses, health officers and physicians. Hence, the skilled birth attendance was 14.6% (**Table 2**).

The most commonly mentioned reason for giving birth at home was short and smooth labor 226(68.5%) followed by presence of TBAs 117(34.6%).

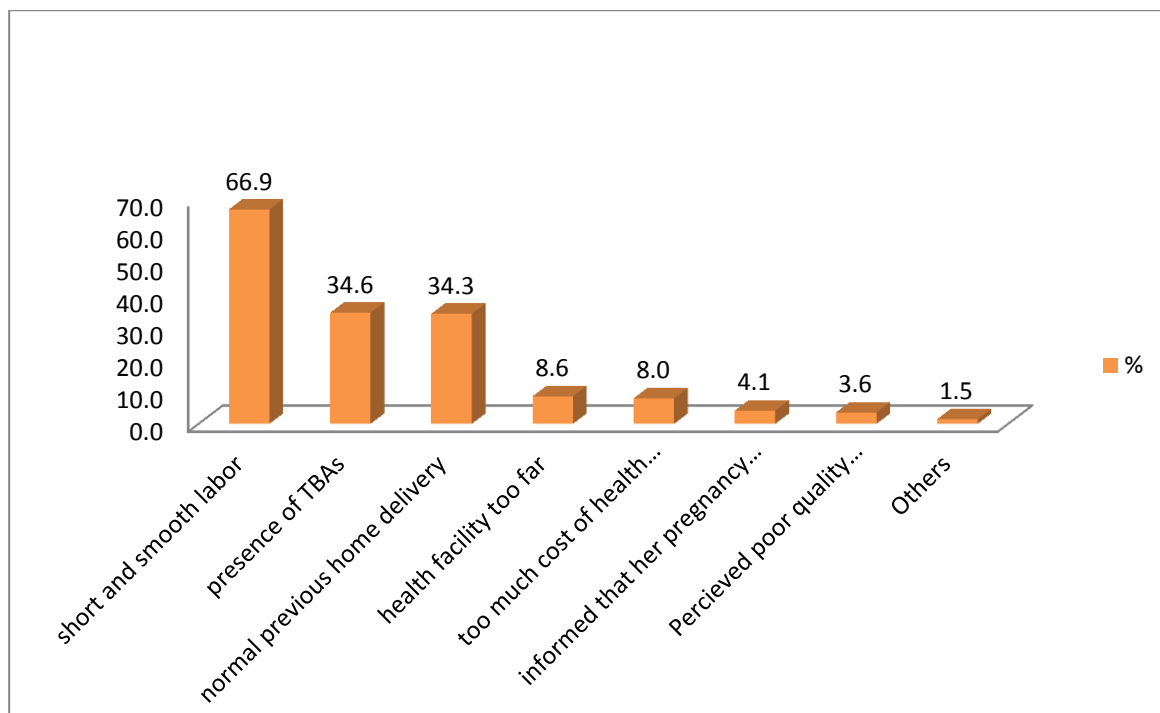


Figure 3: Percent distribution of reasons for home delivery among pregnant women in Arba Minch Zuria, Gammu Goffa Zone, SNNPR.

Others=Lack of privacy at health facility, no problem occurred, etc

Most TBAs in the TBAs discussion raise the issue of lack of privacy in health facilities which they mentioned as the main reason women come to get service from them, and do not prepare for giving birth in the health facilities. A 42 years old lady, one of the discussant in the TBAs FGD said, " *Women come to us for birth, not because they knew that we are experienced than the health professionals rather they know that we treat them friendly, keeping their privacy. Those women who give birth in our hands are ashamed of visiting health institutions where males, students, and a group of females watch them naked. This is out of our culture; they come to us even being late after passing several hours waiting for a normal birth.....but finally when they become between life and death ,the whole community starts to give attention. In some households their husbands do not allow them to visit health institutions for the reason I mentioned earlier.*"

The most common reasons given by women for giving birth in the health institution were seeking better health service 110 (43.8%) and informed to deliver in the health facility 110(43.8%).

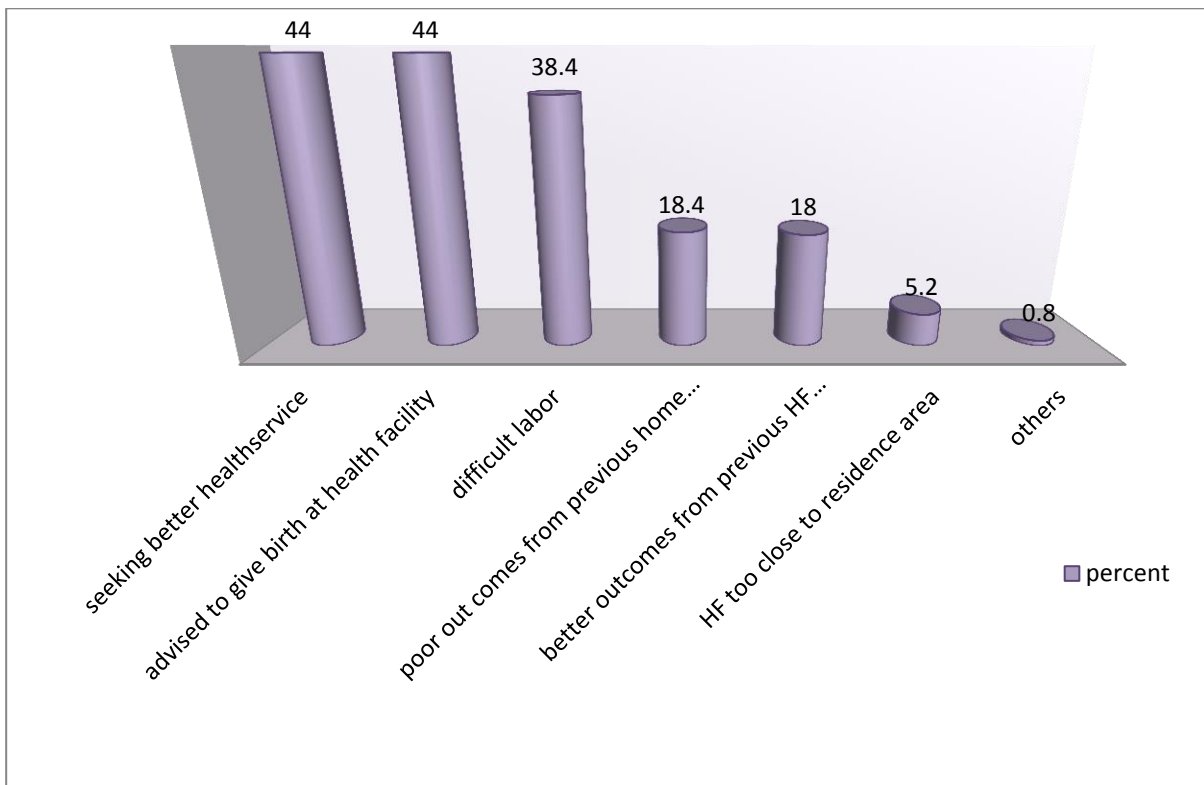


Figure 4: *percent distribution of reasons for health facility delivery among pregnant women in Arba Minch Zuria woreda*

Others=fear of death, occurrence of serious conditions, free service, etc HF=Health Facility

Majority of the respondents 616(87.2%) ever heard about ANC service and 91(12.8%) never heard about ANC service. Among women who heard about ANC service, the majority 502(81.5%) have received the service for this current pregnancy. Only 70(13.9%) of the women attended ANC four and more times. About four hundred sixty one (91.8%) of ANC attendants have received advice during ANC.

Table 2: Obstetric and antenatal experience of pregnant women living in Arba Minch Zuria Woreda, Gammo Goffa Zone, March, 2015.

Variable	Category	Frequency (%)
Age at first pregnancy(N=707)	less than 18	194(27.4)
	Greater than or equal to 18	451(63.8)
	Do not know	62(8.8)
	Mean \pm SD	20.2 \pm 2.9
Gravidity (N=707)	One	119(16.8)
	2 and above	588(83.2)
Parity(n=583)	One	203(34.8)
	Two to four	332(56.9)
	Five and more	48(8.2)
Ever had abortion or miscarriage(n=588)	Yes	114(19.4)
	No	474(80.6)
Ever had still birth(n=583)	Yes	70(11.9)
	No	513(88.1)
Place of last birth(n=588)	At home	338(57.5)
	At health institution	250(42.5)
Attendant of birth(n=588)	Relative/caretaker/TBA	338(57.5)
	Health extension worker	164(27.9)
	Midwife/nurse/health officer/physician	86(14.6)
Ever heard ANC service(N=707)	Yes	616(87.1)
	No	91(12.9)
ANC visit(n=616)	Yes	502(81.5)
	No	114(18.5)
Frequency of ANC(n=502)	Less than four visits	432(86.1)
	Greater than or equal to four visits	70(13.9)
Received advice during ANC(n=502)	Yes	461(91.8)
	No	41(8.2)

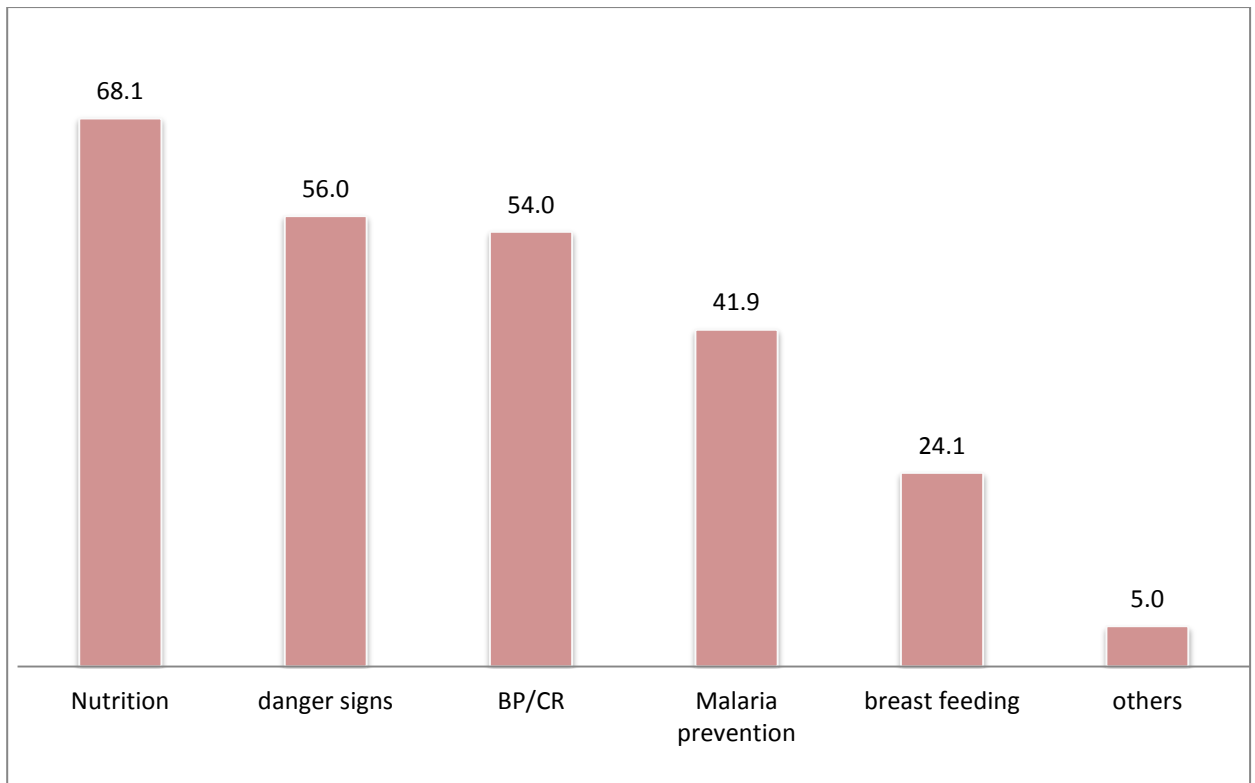


Figure 5: *Advices received during ANC among pregnant women in Arba Minch Zuria Woreda, Gammo Goffa Zone, SNNPR.*

*NB: Multiple answers were possible for the counts in figure 3, 4 and 5 above.
Others=test for HIV, not to lift heavy objects*

6.3. Knowledge of pregnant women on key danger signs during pregnancy, LAD, and the postpartum period

About two third of the study subjects 479(67.80%) expect the occurrence of unforeseen serious problems during pregnancy, labor and delivery and the postpartum period. Out of those who claim the occurrence of unforeseen serious problems during pregnancy 461(65.2%) ever heard about serious problems/danger signs during pregnancy, almost a similar proportion of women heard about LAD (Labor and delivery) danger signs, however a relatively lower proportion of women 401(56.7%) ever heard about postpartum danger signs.

Among women who ever heard about danger signs, vaginal bleeding is the most commonly mentioned danger sign during pregnancy 372(80.7%), labor and delivery 393(85.1%) and the post-partum period 345(86.1%). Blurring of vision was mentioned by 266(57.7%) of women who ever heard about danger signs during pregnancy and this accounts for 37.6% of the seven hundred seven pregnant women included in the study. Out of a total number of women in the study 52.6%,37.6%, and 23.5% of them mentioned vaginal bleeding, blurring of vision and swollen hands or face as a danger sign during pregnancy respectively. Retained placenta was the second most commonly mentioned key danger sign among women who ever heard about LAD danger signs 207(44.8%). Out of a total number of women in the study only 55.6%, 29.3%, 28.3%, and 11.3% mentioned vaginal bleeding, retained placenta, prolonged labor, and convulsion as a danger sign during LAD respectively. More than half of women who ever heard about danger signs during the postpartum period 218(54.4%) mentioned foul-smelling vaginal discharge as a danger sign during the postpartum period. Out of a total number of women included in the study only 48.8%, 30.8%, 14.7% mentioned vaginal bleeding, foul-smelling vaginal discharge and high grade fever as a danger sign during the postpartum period respectively.

Regarding the knowledge of the pregnant women during pregnancy, LAD, and the postpartum period more than a third of pregnant women 259(36.6%), a sizeable proportion of them 101(14.3%), and about a third of them 220 (31.1%) were knowledgeable on key danger signs during pregnancy, LAD and the postpartum period respectively (**Table 3**).

Table 3: Knowledge of pregnant women on key danger signs during pregnancy, labor/child birth, and the post-partum period in Arba Minch Zuria Woreda, Gammu Goffa Zone, SNNPR, March,2015.

Variables	Category	Frequency
Expect the occurrence of unforeseen problems(N=707)	Yes	479(67.8)
	No	228(32.2)
Ever heard of danger signs during pregnancy(N=707)	Yes	461(65.2)
	No	246(34.8)
Know key pregnancy danger signs⊕(n=461)	Vaginal bleeding	372(80.7)
	Swollen hands or face	168(36.4)
	Blurred vision	266(57.7)
	Others*	7(1.5)
Pregnancy danger signs can kill women(n=461)	Yes	419(90.9)
	No	42(9.1)
Ever heard of LAD danger signs(N=707)	Yes	462(65.3)
	No	245(34.7)
Know LAD danger signs(n=462) ⊕	Severe vaginal bleeding	393(85.1)
	Prolonged labor	200(43.3)
	Convulsion	80(17.3)
	Retained placenta	207(44.8)
	Others**	15(3.3)
LAD danger signs can kill women(n=462)	Yes	433(93.7)
	No	29(6.3)
Ever heard of postpartum danger signs(N=707)	Yes	401(56.7)
	No	306(43.3)
Know postpartum danger signs(n=401)	Severe vaginal bleeding	345(86.1)
	Foul-smelling vaginal discharge	218(54.4)
	High fever	104(25.9)
	Others***	7(1.7)
Postpartum danger signs can kill women(n=401)	Yes	370(92.3)
	No	31(7.7)
Knowledgeable on pregnancy danger signs(N=707)	Yes	259(36.6)
	No	448(63.4)
Knowledgeable on LAD danger signs(N=707)	Yes	101(14.3)
	No	606(85.7)
Knowledgeable on postpartum danger signs(N=707)	Yes	220(31.1)
	No	487(68.9)

*=*excessive vomiting, cessation of fetal movement, etc* **=*loss of consciousness, hand/foot presentation,etc* ***=*loss of consciousness, not able to breast feed, etc.*

6. 4. Awareness and practice of pregnant women on preparation for birth and its complications

Majority of the respondents 626 (88.5%) mentioned saving money as a means of preparing for birth and its complications. However, less than a third of them mentioned identifying skilled provider 193(27.3%) as ways of preparing for birth and its complications. Only few mentioned identifying blood donor as a way of preparation for birth and its complications 41(5.8%). In the FGDs majority of the discussants reported that they believe in the importance of preparation for birth for a healthy pregnant woman since they obviously observed that a labor is not predictable mentioning its occurrence in the midnight, when there is no one with the woman, with severe bleeding, without having money to go to health facilities or the nearby road for transport access.

A 43 years old man, one of the discussants in the men FGD said”*I remember the moment when a torrential rain with thunderstorm began in the midnight and all of a sudden my wife began to suffer from a labor pain, I was highly keyed up by the situation.....I don’t have a helper in the home except two of my children who were very young the labor lasted the whole night and she passed the night shoutingon the coming day we waited the whole day expecting for a normal birth.... we had no money in hand as it was not a harvesting season for all of us... we had no access for transportation here in the high lands and my neighbors left to a nearby vicinity to help for victims of land slide... we consulted a health extension worker in our kebele....she told us to take her to Arba Minch Hospital without wasting time visiting the nearby health center...after she has been exhausted, we took her to the hospital....and we were told that , she needs an operation because her uterus was torn by that time....we lost her uterus and left with only two children....we advise the importance of preparation for birth for the whole community as it was painful to cope with such catastrophic incidents.*”

Regarding the arrangements made 502(71.0%) of the pregnant women in the study made some arrangements for birth and its complications. Over all, only 212(30%) of the pregnant women were well prepared for birth and its complications and 495(70.00%) of them were not well prepared for birth and its complications (Table 4).

Table 4: Awareness and practice of pregnant women on preparation for birth and its complications in Arba Minch Zuria Woreda, Gammu Goffa Zone, SNNPR, March, 2015.

Variables	Category	Frequency (%)
Know elements of Birth preparation (N=707)	Saving money	626(88.5)
	Identifying mode of transportation	285(40.3)
	Identifying skilled provider	193(27.3)
	Identifying place of delivery	313(44.3)
	Identifying blood donor	41(5.8)
	Others*	73(10.3)
Made arrangements for birth and its complications(N=707)	Yes	502(71.0)
	No	205(29.0)
BP/CR (n=707)	Well-prepared	212(30.0)
	Not well-prepared	495(70.0)

Others=Porridge goods, slaughtering animals, new blade, etc.

The most common preparation was made for porridge goods where 412(82.1%) women who started arrangements for birth and its complications were prepared for it. Among the important components considered for birth preparedness and complication readiness, the most common preparation was made for saving money 383(76.3%). This accounts for 54.2% of total number of women participated in the study. About a third of women 253(35.8%) planned to give birth in the health facilities and the rest 454(64.2%) of them planned to give birth at home (Figure 6).

Majority of the FGD discussants agreed on preparations for porridge, and saving money as their practice of birth preparedness. From the husband's FGD, a 39 years old man said "we have four children...so far we think that we were prepared for birth when we fulfill materials for porridge, new blade for cord cutting, butter for feeding the baby, and saving money, but till now she didn't face any problem. We were using the money for buying a slaughtering animal, and cloth for the baby"

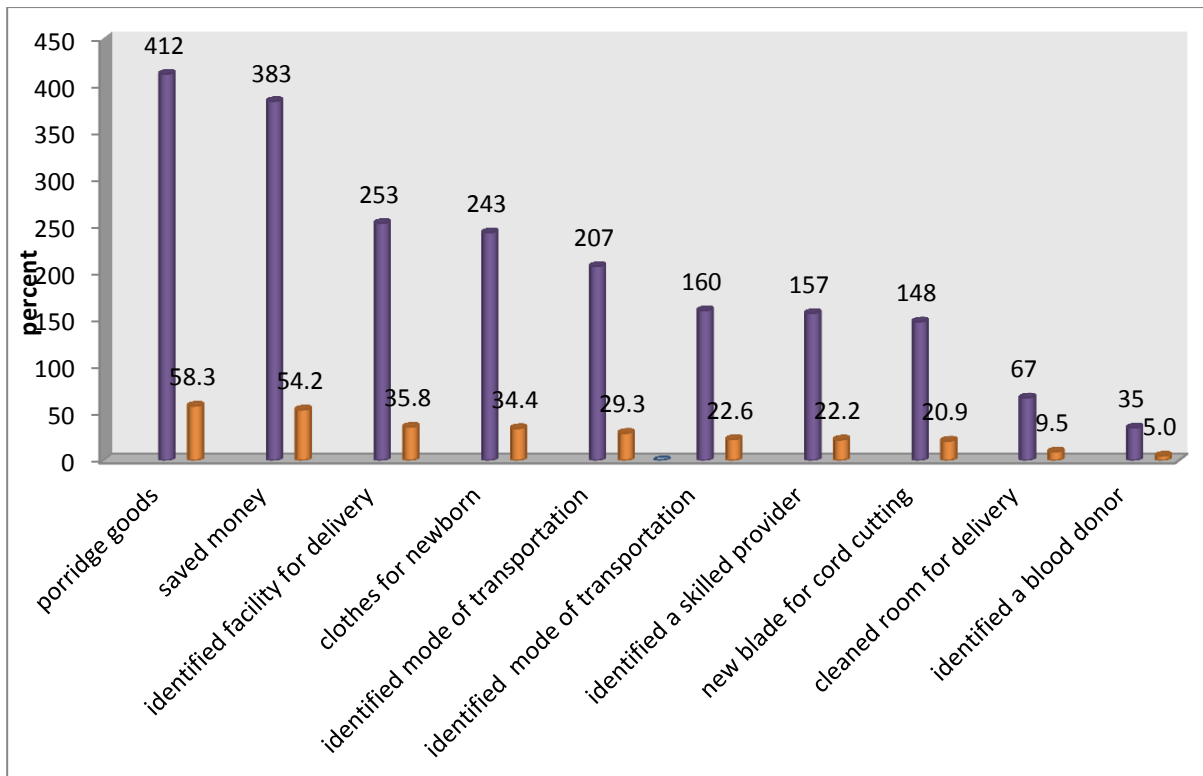


Figure 6: Arrangements made by pregnant women for birth and its complications in Arba Minch Zuria Woreda, Gammo Goffa Zone, March, 2015.

6.5. Household Food Security Status of Pregnant Women in Arba Minch Zuria Woreda

In this study, 323(45.7%) of pregnant women live in food secure households. Around a third of them 217 (30.7%) live in mild food insecure households, a sizeable proportion 97(13.8%) of them live in moderate food insecure households, and 70(9.9%) of them live in a severe food insecure households. Overall, 384 (54.3%) of the women live in food insecure households and the rest 323(45.7%) live in food secured households (**Table 5**).

Table 5: Household food security status of pregnant women in Arba Minch Zuria Woreda, Gamo Goffa Zone, SNNPR, March, 2015.

Variable	Category	Frequency (%)
Food secured (N=707)	Yes	323(45.7)
	No	384(54.3)
Mild food insecurity (N=707)	Yes	217(30.7)
	No	490(69.3)
Moderate food insecurity(N=707)	Yes	97(13.7)
	No	610(86.3)
Severe food insecurity(N=707)	Yes	70(9.9)
	No	637(90.1)
Household food insecurity(N=707)	Yes	384(54.3)
	No	323(45.7)

6.6. Factors affecting Birth preparedness and complication readiness among pregnant women in Arba Minch Zuria Woreda

Binary logistic regression analysis showed that women from high wealth status were more than two times well prepared than those from low socioeconomic status (AOR=2.29(1.16, 4.54)). The odds of women with parity of two to four were 0.51 and 0.22 times as much to be prepared for birth and its complications than those with a parity of one(AOR=0.51(0.31,0.84) and AOR=0.22(0.07,0.68)) respectively. Women with four and more antenatal visits were about 5 times more likely to be prepared for birth and its complications than those who had less than four visits (AOR=4.52(2.26, 9.02)). Women who received advice on preparation for birth and its complications during ANC were 1.84 times as much to be prepared for birth preparedness and complication readiness than those who didn't receive advice (AOR=1.84(1.13, 3.01)) (Table 6 and 7).

The FGD discussion also revealed the importance of higher wealth and ANC attendance where more than half of the discussants in all the groups (TBAs (60%), health professionals (75%), and husbands of pregnant women (55%) agreed that women who do not prepare for birth in time are those having less income and resources. The importance of ANC was also emphasized particularly by health professionals working in the area.

A 32 years old health officer working in the Woreda, one of the health professionals FGD discussants said that *“In my decade experience here in the woreda, the major reason why my clients do not come early for birth is lack of resourceseven though we are providing a free maternity service here in the health center, some women could not afford to pay for their food and drink, though they finally come when the labor has already ended with complications; sometimes our staffs contribute from their pocket to send mothers to Arba Minch hospital when the ambulance we have gets occupied by another woman. People in the high lands here do not have access to markets, they do not produce cash crops, and are not having money, and hence could not save money”*.

Within the same discussion a 24 years midwife working in the same health center said, *“we often focus advice on birth preparations in later ANC visits but most women interrupt their ANC follow up even though we were using female health development army leaders for peer education in the communities ...women mock at us saying you are working for your per diem.”*

Women who were knowledgeable on danger signs during LAD were 1.85 times well prepared for birth and its complications than those who were not (AOR=1.85(1.01, 3.44)). The odds of women from food insecure households were about 0.26 times as much to be prepared for birth and its complications than those women from food secured households(AOR=0.26(0.16, 0.42)).(Table 7)

In the FGDs too, the importance of inadequate food at home and its effect on birth preparation was emphasized by some respondents. In the men FGD, a 35 years old man said *“ we do not have adequate land, our children have already left to Addis Abeba and Arba Minch for weaving and shoe polishing, we need some more children because they serve us until they leave the area, we all strive to fulfill our belly, we expect a normal labor but sometimes we face bad days, but God will help us.”*

Regarding socio-cultural factors which hinder women from preparing for birth and its complications, there was no strong culture and religious ground which prevents women from preparing for health facility delivery or giving birth in the health facilities. However some of the participants in the FGDs raised issues related to exposure to sunlight, exposing their body to a male other than their husband and lack of the customary ceremonies at home immediately after birth like eating porridge, drinking coffee which they mentioned as minor as compared to women's life, and this days because of raising of awareness the community started to break this old traditions.

Table 6: Socio-demographic factors affecting birth preparedness and complication readiness in Arba Minch Zuria Woreda, Gammo Goffa Zone, SNNPR, March, 2015.

Variables	category	BP/CR		OR 95%CI	AOR 95%CI
		Well prepared	Not well prepared		
Age of the woman	Less than 20	18(2.5)	71(10.1)	1	1
	20-34	143(20.2)	330(46.7)	1.71(0.98,2.97)	0.45(0.16,1.32)
	Greater than equal to 35	51(7.2)	94(13.3)	2.14(1.15, 3.97)*	1.65(0.48,5.57)
Educational status	Illiterate	80(11.3)	174(24.6)	1	1
	Read and Write	21(2.9)	50(7.1)	0.92(0.52,1.62)	1.18(0.49,2.85)
	Primary Education	70(9.9)	217(30.7)	0.71(0.48,1.03)	0.69(0.35,1.35)
	Secondary education and above	41(5.8)	54(7.7)	1.65(1.04,2.74)*	1.46(0.59,3.63)
Occupation	House wives	115(16.3)	223(31.5)	1	1
	Farmer	59(8.4)	190(26.8)	0.61(0.42,0.87)*	0.82(0.47,1.42)
	Others*	38(5.4)	82(11.6)	0.89(0.57,1.41)	0.76(0.37,1.56)
Marital status	In marital union	206(29.1)	470(66.5)	1	1
	Not in marital union	6(0.85)	25(3.5)	0.55(0.22,1.35)	0.61(0.11,3.28)
Wealth status	High	89(12.6)	141(19.9)	1.74(1.16,2.62)*	2.29(1.16,4.54)**
	Medium-high	27(3.9)	96(13.6)	0.77(0.46,1.32)	2.19(0.93,5.18)
	Low-medium	42(5.9)	107(15.2)	1.08(0.67,1.74)	1.59(0.72,3.54)
	Low	54(7.6)	149(21.3)	1	1
Ever listen to the radio	Yes	123(17.4)	247(34.9)	1.38(1.01,1.92)*	0.84(0.46,1.55)
	No	89(12.6)	248(35.1)	1	1

*COR=Crude odds ratio, AOR=Adjusted odds ratio, CI=Confidence interval, *=significant in bivariate analysis **=statistically significant association at p-value of less than 0.05 after adjusting for all the other variables.*

Table 7 : Obstetric, antenatal and other factors affecting birth preparedness and complication readiness in Arba Minch Zuria Woreda, Gammo Goffa Zone, SNNPR, March, 2015.

variables	category	BP/CR		COR 95%CI	AOR 95%CI
		Well prepared	Not well prepared		
Parity	One	78(13.4)	125(21.4)	1	1
	Two to Four	97(16.6)	235(40.3)	0.66(0.46,0.96)*	0.51(0.31,0.84)**
	Greater than or equal to 5	12(2.1)	36(6.2)	0.54(0.26,1.09)	0.22(0.07,0.68)**
History of still birth	Yes	29(4.9)	41(7.1)	1.57(0.95,2.63)	1.87(0.89,3.93)
	No	159(27.3)	354(60.7)	1	1
Place of last birth	Home	96(16.3)	236(40.1)	1	1
	Health institution	90(15.3)	166(28.3)	1.43(0.97,1.96)	0.85(0.52,1.41)
Frequency of ANC visit	Less than four times	137(27.3)	295(58.7)	1	1
	Four and above visits	44(8.7)	26(5.2)	3.64(2.15,6.16)*	4.52(2.26,9.02)**
Received advice on BP/CR	Yes	101(21.9)	148(32.1)	1.54(1.06,2.30)*	1.84(1.13,3.01)**
	No	65(14.1)	147(31.9)	1	1
Knowledge on pregnancy danger signs	Knowledgeable	100(14.2)	159(22.5)	1.88(1.36,2.62)*	0.96(0.53,1.72)
	Not knowledgeable	112(15.8)	336(47.5)	1	1
Knowledge on LAD danger signs	Knowledgeable	44(6.2)	57(8.1)	2.02(1.31,3.09)*	1.85(1.01,3.44)**
	Not knowledgeable	168(23.8)	438(61.9)	1	1
Knowledge on post- partum danger signs	Knowledgeable	86(12.2)	134(18.9)	1.84(1.31,2.58)*	1.37(0.83,2.29)
	Not knowledgeable	126(17.8)	361(51.1)	1	1
Household food insecurity	Food insecure	79(11.2)	305(43.2)	0.54(0.33,0.87)*	0.26(0.16,0.42)**
	Food secured	133(18.8)	190(26.8)	1	1

*COR=Crude odds ratio, AOR=Adjusted odds ratio, CI=Confidence interval, *=significant in bivariate analysis at p-value of less than 0.05 **=statistically significant association at p-value of less than 0.05 after adjusting for all the other variables.*

7. DISCUSSION

This community based study tried to assess prevalence of birth preparedness and complication readiness and factors affecting it in randomly selected rural kebele's of Arba Minch Zuria Woreda, SNNP region. The prevalence of birth preparedness and complication readiness was found to be 30%. The odds of being prepared for birth and its complications was higher among women from high economic class, frequency of antenatal care greater than or equal to four, who received advice on BP/CR, and who were knowledgeable on labor and delivery danger signs. However, it was lower for those women from food insecure households.

In this study, with consideration of arrangements made on identification of the appropriate facility for delivery, mode of transportation, skilled attendant, saving money, only 30% of pregnant women were well prepared for birth and its complications. This was relatively higher than a study conducted in Aleta Wondo woreda of Sidama Zone, Arsi Woreda of Oromiya region and Adigrat town in Tigray region where only 17% and 16.5% of women in the studies were well prepared for birth and its complications (15,17,18). This could be related to the time of study where the Aleta Wondo and Adigrat town studies were conducted immediately after the implementation of focused antenatal care and this implies that women in this study had ample of opportunities to hear about the important components of birth preparedness and complication readiness and would be benefited from the arrangements made by the government like free maternity service and ambulance service which was not in place by that time. The difference with the study from Arsi Woreda of Oromiya region could be related to the sociocultural differences in the two regions and also the study subjects were postnatal women who report what they performed with possible loss of memory than the pregnant women in this study who report what they were doing by the time of the study (5,16). The finding from this study is in agreement with the study in Goba Woreda of Oromiya Region and Northern Nigeria where about 29.9% and 27.5% of women in the study were prepared for birth and its complications (11,16). However, it is still very low as compared to other East African countries where in Mpwapwa district of Tanzania and Mbarara District of Southwest Uganda about 86.2% and 53.9% of women were prepared for birth and its complications respectively (17,18). As frequency of ANC visit is a strong predictor of BP/CR (17), the difference could be related to the difference in frequency of ANC visits in the two studies where in the Ugandan and Tanzanian studies more than two-third of the women attended ANC 4 times and above contrary to the few (9.9%) women in this study.

Among the important components considered in the study (identifying facility for delivery, saving money, identifying mode of transportation, identifying skilled attendant and identifying blood donor) the most commonly made arrangement was saving money followed by identification of health facility for delivery and the least arrangement was made for identification of blood donor. The finding is consistent with findings from previous studies in India, Nigeria, Uganda and Ethiopia (11,13,15,16). This may be explained in relation to women's knowledge that having money in hand enables them to buy the necessary materials, to have access for transportation at times of referrals in case of emergencies. The least arrangement with identification of blood donor may be related to the fact that the preparation particularly involves families and the community as a whole (5).

Women from high socio-economic status were more than two times well prepared than those from low socioeconomic status (AOR=2.29(1.16, 4.54)). This implies that women from a higher socioeconomic situation could earn more money and hence are in a position to save money, arrange for transportation, and to have confidence in prioritization of health service matters as opposed to their counterparts.

Parity was the other predictor of birth preparedness and complication readiness. Women with parity of two to four and those with five and more were 0.51 and 0.22 times as much to be prepared for birth and its complications than those with a parity of one (AOR=0.51(0.31,0.84) and AOR=0.22(0.07,0.68)). This could be related to the less proportion of illiterate women among primiparas (23.1%) and high proportion (76.9%) of illiterate women in the multiparas as educational status is a strong predictor of BP and CR (11,14,15-17) even though it didn't show a statistically significant association in this study.

In the study, women who attended ANC four times and above were more than four times well prepared for birth and its complications than those who attended for less than four times (AOR=4.52(2.26,9.02)). This finding is consistent with findings from the Robe study from Oromiya region (17). Existing studies also showed that pregnant women who attended ANC were more likely to be prepared for birth and its complications than those who didn't attend ANC (11, 16-18). As the number of ANC visits increases, the likely that women get prepared for birth and its complications increases as there is advice on its components in each visit

since birth preparedness and complication readiness is one of the interventions in the focused antenatal care (32).

Women who received advice on at least one of the important elements of birth preparedness and complication readiness (saving money, identifying the appropriate health facility, skilled birth attendant and mode of transportation) during ANC follow up were 1.84 times well prepared for birth and its complications than those who didn't receive advice (AOR=1.84(1.13,3.01)). This is in agreement with findings from the Adigrat town study. This could be explained by the effect of advice in raising the awareness of women on birth preparedness and complication readiness and which in turn resulted in a better practice of BP/CR (15, 32).

Knowledge of danger signs during each stage of childbearing (pregnancy, labor/birth, and postpartum) may help women recognize and get care for a life-threatening problem more quickly. It is the essential first step in the appropriate and timely referral to essential obstetric care (5). In this study, about a third of women had spontaneous knowledge of danger signs during pregnancy. This is relatively higher than the study conducted in Robe Woreda of Oromiya region where only 13% of women knew at least two key danger signs during pregnancy. A similar proportion of women in the study were knowledgeable on key danger signs during the postpartum period where as in the Robe study only 9.6% mentioned at least two key danger signs during postpartum period. This could be related to the difference in the study subjects where in the later study postnatal mothers were interviewed which implies that a possibility of memory loss will be there. However, the difference is negligible on knowledge of women during LAD where in this study only 14.3% were knowledgeable on key danger signs during LAD, where as in the Robe study 13% mentioned at least three key danger signs during LAD (17). Women who were knowledgeable on key danger signs during LAD were about two times well prepared for birth and its complications than those who were not knowledgeable on key danger signs during LAD (AOR=1.85(1.01,3.44)). This implies that women having knowledge on obstetric danger signs will have a fear that this danger signs could happen to them and get prepared for birth and its complications. In this study, women from food insecure households were 0.26 times as much well prepared for birth and its complications than those from food secured households (AOR=0.26(0.16,0.42)).

Household food insecurity was inversely associated with ANC service utilization and facility delivery in a previous study from Zimbabwe(25),and the hypothesis that it could be operating through BP/CR in this study has come up with a strong independent association between the two(AOR=0.26(0.16,0.42)). This may be explained by the fact that women in food insecure households strive for the fulfillments of their food condition than preparing themselves for birth and its complications because of the precedence of demand for food over demand for health care as food is the most basic need which cannot be postponed (24). Despite an extensive literature search, no studies were identified that had researched possible associations between household food insecurity and birth preparedness and complication readiness. Our findings should therefore be considered for further investigation of the factors having an association with food insecurity.

8. STRENGTH AND LIMITATIONS OF THE STUDY

8.1. Strength of the study

The study had high response rate of 99.2%. Selection bias was minimized since it was community-based study which employed probability sampling technique and the interviewers were health professionals out of their routine working place. Moreover, a qualitative design was used to complement or triangulate the findings from quantitative survey.

8.2. Limitation of the study

The state and months of pregnancy was self-reported by the woman or it was not confirmed by any diagnostic test which may alter the actual number of pregnant women for the study. Similarly, pregnant women who were not registered in the family folders of the HEWs could underestimate the actual number of pregnant women living in the woreda.

9. CONCLUSION

- ❖ To sum up, this study demonstrated that the prevalence of birth preparedness and complication readiness was inadequate in the study area in comparison to the WHO standard that every pregnant woman should have a birth plan but it slightly higher than previous studies in the country.
- ❖ In relation to this, the skilled birth attendance and ANC visit of four and above was also very low.
- ❖ The most commonly made arrangements were saving money and identification of place of delivery.
- ❖ The most important factors which affect Birth preparedness and complication readiness were socioeconomic/wealth status, parity, frequency of antenatal care ,receiving advice on BPCR during ANC, knowledge on LAD danger signs, and household food insecurity.
- ❖ The main reason given by the FGD discussants for less preparation was lack of resources or inadequate income, and less preference of health facilities for delivery because they get ashamed of the procedures in health facilities.
- ❖ Women from high socio-economic status were more than two times more likely well prepared than those from low socioeconomic status.
- ❖ Multiparas were less likely to be well prepared for birth and its complications.
- ❖ Women with four or more ANC visits were more than four times more likely well prepared than those with less than four visits.
- ❖ Women who received advice on at least one of the important components of BP/CR were more likely to be well prepared for birth and its complications than their counterparts.
- ❖ Women who were knowledgeable on LAD danger signs were about two times more likely to be well prepared for birth and its complications than their counterparts.
- ❖ Women from household food insecure situations were less likely well prepared for birth and its complications than their counter parts.

10. RECOMMENDATIONS

Based on the findings, the following recommendations were forwarded to the concerned bodies:

1. Policy Makers

- ❖ As birth preparedness and complication readiness is a strong predictor of skilled birth attendance and institutional delivery which in turn has a positive effect in the reduction of maternal mortality, policy makers at federal and regional levels has to collaborate to enhance promotion of birth preparedness and complication readiness at different levels in the health sector by promoting thorough attendance of ANC, and improving socio-economic and household food security status of women.

2. Gammo Goffa Zone Health desk and Arba Minch Zuria Woreda Health Office

- ❖ Since women with ANC of four or more visits were very low, the zonal and woreda health offices has to strengthen supportive supervision to the respective health facilities for possible improvements in the frequency of ANC and BP & CR activities.
- ❖ The Zonal and Woreda health offices have to work in collaboration with the agricultural sectors to improve food security with emphasis on pregnant women.

3. Health Professionals and Health Extension Workers

- ❖ Health professionals and HEWs has to strengthen their work on the improvement of frequency of ANC through massive community mobilization so that women receiving antenatal care has to attend at least the four visits recommended by the WHO focused antenatal care before they give birth.
- ❖ Similarly emphasis should be given to advice on birth preparedness and complication readiness activities with particular emphasis on identification of skilled provider and blood donor. Moreover, they should strengthen advice on danger signs of obstetric complications.
- ❖ Multiparous women were less likely to be prepared for birth and its complications imply that this group should be one of the priorities for targeting education campaigns on the benefits of birth preparedness and complication readiness.
- ❖ Health education programs should be provided to the general community on the importance of complete attendance of ANC, advices on birth preparedness and complication readiness and danger signs of obstetric complications.

4. Researchers

- ❖ Studies with stronger design (longitudinal studies) need to conduct to address the effect of nutrition related factors on birth preparedness and complication readiness.

11. REFERENCES

1. UNFPA. No Woman Should Die Giving Life: The Lancet's Maternal Survival and Women Delivery Series, 2006/2007.
<http://www.unfpa.org/safemotherhood>)
2. Central Statistical Agency, Ethiopia and ICF International. Ethiopia Demographic and Health Survey, Addis Ababa Ethiopia, 2011 and Calverton, Maryland, USA: Central Statistical Agency and ICF International, 2012.
3. Central Statistical Agency Ethiopia. Ethiopia Mini Demographic and Health Survey, Addis Ababa, Ethiopia, 2014.
4. World Health Organization .Birth and emergency preparedness in antenatal care. Integrated management of pregnancy and childbirth (IMPAC). Department of Making Pregnancy Safer. WHO, Geneva, 2006; 1.9:3-6.
5. JHPIEGO. Maternal and Neonatal Health. Monitoring Birth Preparedness and Complication Readiness, Tools and Indicators for Maternal and Newborn Health. Johns Hopkins Bloomberg, school of Public Health. Center for communication programs, Family Care International, 2004. Available at: http://pdf.usaid.gov/pdf_docs/pnada619.pdf
6. World Health Organization. Impact of HRP research in maternal and perinatal care: a case-study. UNDP/UNFPA/ WHO/World Bank Special Programme of Research, 2008.
7. JHPIEGO. Birth Preparedness and Complication Readiness: A Matrix of Shared Responsibility. Maternal and Neonatal Health (MNH) Program. 2001.
8. WHO, UNICEF, UNFPA, and World Bank. Trends in Maternal Mortality. Geneva, World Health Organization, 2013. Available at <http://www.who.int/reproductivehealth/publications/monitoring/9789241503631/en/>, accessed 12 September 2014.
9. Ministry of Finance and Economic Development and UNDP. MDGs Report: assessing progress towards the Millennium development Goals Ethiopia Addis Ababa, Ethiopia, 2012.
10. Rupsa M, Dipta K, Seshadri K etal. Status of birth preparedness and complication readiness in a rural community: a study from West Bengal, India. Al Ameen J Med Sci, 2014 ; 7 (1) :52 - 57.
11. Henry V, Sally Giorgio C. Awareness of Critical Danger Signs of Pregnancy and Delivery, Preparations for Delivery, and Utilization of Skilled Birth attendants in Nigeria. Journal of Health Care for the Poor and Underserved, 2013; 24: 152–170.

12. Allisyn C. Moran, Gabriel S. et al. Birth-Preparedness for Maternal Health: Findings from Koupéla District, Burkina Faso. *Journal of Health, Population, and Nutrition*. International Centre for Diarrheal Disease Research, Bangladesh, 2006; 24(4): 489–497.
13. David P., Andrea B., Fatuma M. Birth preparedness and complication readiness among women in Mpwapwa district Tanzania .*Tanzania Journal of Health Research*, 2012; 14(1).
14. Gustav A, Karen O, Jacob S et al. Associations between mass media exposure and birth preparedness among women in southwestern Uganda: a community-based survey. *Global Health Action*, 2014.
15. Hiluf M and Fantahun M. Birth Preparedness and Complication Readiness among women in Adigrat town, North Ethiopia. *Ethiop.J. Health Dev*,2008 ;22(1):3-5.
16. Markos D and Bogale D. Birth preparedness and complication readiness among women of child bearing age group in Goba woreda, Oromia region, Ethiopia. *BMC Pregnancy and Childbirth*,2014;14:282.Availab le at <http://www.biomedcentral.com/1471-2393/14/282>
17. Kaso M. and Addisse M. Birth preparedness and complication readiness in Robe Woreda, Arsi Zone, Oromia Region, Central Ethiopia: a cross-sectional study. *Reproductive Health Bio Med Central*, 2014; 11: 55.
18. Hailu M, Gebremariam A, Alemseged F et al. Birth preparedness and complication readiness among pregnant women in southern Ethiopia. *PLoS One*, 2011; 6(6):214–32.
19. Ministry of Health, Federal Democratic Republic of Ethiopia; and United Nations in Ethiopia. *MDG Acceleration Compact .Accelerated Action plan for reducing Maternal Mortality*, 2014.
20. Federal Democratic Republic of Ethiopia, Ministry of Health. *Policy and Practice Information for Action*. *Quarterly Health Bulletin*, 2014; 6(1).
21. Oluwafolahan O. Sholeye, Olubukunola A. Jeminusi,Adebisi Oren.et al. A rural – urban comparison. *Journal of Public Health and Epidemiology*, 2014 ; 6(4):158-164
22. SPHI. *Tackling food insecurity and malnutrition in Ethiopia through diversification*. Centro international. CGIAR Science for a food secure future, 2012.
23. Yadira R, Lauren B, Jetty van K, et al. Low utilization of skilled birth attendants in Ngorongoro Conservation Area, Tanzania: A complex reality requiring action. *Health* ,2013; 5: 71-83 <http://dx.doi.org/10.4236/health.201357A4011>
24. Margot B , Reena G, and Jennifer S . Housing Instability and Food Insecurity as Barriers to Health Care among Low-Income Americans. *J Gen Intern Med*, Jan 2012; 21(1): 71–77.

25. S.I. McCoy¹, M.L. Ricculli¹, R. Buzdugan¹ A et al. Food insecurity is a barrier to service uptake in the prevention of mother to child HIV transmission (PMTCT) cascade in Zimbabwe: BMC Public Health ,2015; 15:420 Available at <http://www.ias.2013.org/>.
26. Emma-Ukaegbu U, Nwokeukwu H , Uzochukwu .An Assessment Of Birth Preparedness And Complication Readiness In Antenatal Women In Umuahia North Local Government Area, Abia State, Nigeria. IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), 2014;13:90-94.Available at www.iosrjournals.org
27. FAO. The state of food insecurity in the world. Addressing food insecurity in protracted crises, Rome, Italy, 2010.
28. Haile HK, Alemu ZG, Kudhlande G. Causes of household food insecurity in Koedegaga Peasant Association, Oromiya zone, Ethiopia. Department of Agricultural Economics. University of the Free State, South Africa, 2005; Working Paper Series No. 28074.
29. Sivananthi T, Maria M , Ambika V. Linking Poverty, Food Sovereignty and Security, and Sexual and Reproductive Health and Rights .Arrow for change, 2014; 20(1).
30. Laraia B, Siega-Riz A, Gundersen C, Dole N. Psychosocial factors and socioeconomic indicators are associated with household food insecurity among pregnant women. J Nutr ,2006;136:177–82.
31. Wilunda et al. A qualitative study on barriers to utilization of institutional delivery services in Moroto and Napak districts, Uganda: implications for programming. BMC Pregnancy and Child birth , 2014;14:259.
32. USAID. Focused antenatal care: providing integrated, individualized care during pregnancy. Access to clinical and community maternal, neonatal and women’s health services, 2007.
33. Arba Minch Zuria Woreda Health Office. Annual report of the year 2013/2014, Arba Minch, 2014.
34. Jennifer C, Anne S, and Paula B. Household Food Insecurity Access Scale (HFIAS) for Measurement of Food Access: Indicator Guide questionnaire by Food and Nutrition Technical Assistance (FANTA) III: USAID, 2007.

12. ANNEXE

12.1. English version questionnaire

JIMMA UNIVERSITY

COLLEGE OF PUBLIC HEALTH AND MEDICAL SCIENCES

DEPARTMENT OF POPULATION AND FAMILY HEALTH

Questionnaire Number _____

Household code number _____

Name of Woreda _____ Kebele _____

GENERAL INFORMATION

Verbal Consent Form

Good morning/afternoon. My name is _____.

I represent investigators from Jimma University who conduct a study on *Birth Preparedness and Complication Readiness and its associated factors among pregnant women in Arba Minch Zuria Woreda*. I will be speaking with you about the experience of being pregnant, having children and food conditions in the household. The results of this survey will be used to help improve health programs for women. You have been selected for the interview by means of a random or chance selection process, much like picking an orange out of a basket without looking. 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. You can also refuse to participate in the study entirely. The interview will last approximately in 40 minutes. The information we collect from you will not be shown to anyone outside of this project. Your name will not be written on the questionnaire, and will never be used in connection with any of the information you delivered. If you have any question about this study, you can contact us at the address listed on the card given to you. Your proper answer to these questions will help us for better finding. We would greatly appreciate your help in responding on this survey. May we get your permission to continue?

Yes No

Thank you!

Date _____

Name of the data collector _____

Signature _____

1. SOCIO-DEMOGRAPHIC CHARACTERISTICS OF PREGNANT WOMEN IN ARBA MINCH ZURIA WOREDA.

S.NO	Question	Response	Remark
101.	How old are you now?	Age in Completed Years.....	
102	What is your religion?	1. Protestant 2. Orthodox 4. Muslim 5.Other (specify) -----	
103	What is your marital status now? Are you single, married, widowed,divorced?	1.Married 2. Single 3.Divorced 4.Widowed	
104	Are you currently living with a partner?	1.Yes 2.No	
105	What is your occupation?	1.Farmer 2.House wife 3.Student 4.Government employee 5.NGO employee 6. Unemployed 7.Private work 8.Other (Specify)-----	
106	What is your ethnicity?	1.Gammo 2.Zeise 3.Wolaita 4.Amhara 5. Others specify.....	
107	What is your educational status?	1.Illiterate 2. Read and write 3.First cycle (Grade 1-4) 4.Second cycle (Grade 5-8) 5.High school & preparatory (Grade 9-12) 6.Tertiary education and above	
108	Do you ever listen to the radio?	1. Yes 2. No	→ 109
109	How often do you listen to the radio? Almost every day, at least once a week, or less than once a week?	1. Almost every day 2. At least once a week 3. Less than once a week 4.Other _____ (specify)	

2. OBSTETRIC HISTORY AND ANTENATAL CARE EXPERIENCE OF PREGNANT WOMEN IN ARBA MINCH ZURIA WOREDA.

S. No	Question	Response	Remark
201	Are you pregnant now?	1. Yes 2. No	
202	What was your age when you become a pregnant for the first time?	-----years	
203	How many times did you become a pregnant (gravida)?	-----times	→ 211
204	How many births did you give so far (para)?	-----births	
205	Have you ever experienced abortion/miscarriage?	1. Yes 2. No	
206	Have any of your pregnancies resulted in a baby that was born dead (baby who never cried or showed any signs of life (a still-birth))?	1. Yes 2. No	
207	Where did you give your last birth?	1. Home 2. Health institution	→ 209
208	What was your reason for giving birth at home?	1. Short and smooth labor 2. Normal previous home delivery 3. Too much cost of health facility 4. Presence of TBAs 5. Perceived poor quality service of health facility 6. Informed that her pregnancy was normal 7. Health facility too far 8. Others, specify-----	
209	What was your reason for giving birth at health institution?	1. Difficult labor 2. Need better service in health facility 3. Informed to deliver in health facilities 4. Poor outcomes from previous home delivery 5. Previous better outcomes from institutional delivery 6. Health facility close to where I live 7. Others specify.....	
210	Who has attended during the birth?	1.Relative/ caretaker 2.Health extension worker 3.Midwife/nurse/HO/Doctor	
211	Have you ever heard about ANC service?	1. Yes 2. No	→ 301

212	Did you see anyone for antenatal care during this pregnancy?	1. Yes 2. No	→ 301
213	How many times in total did you receive antenatal care during the current pregnancy?	1. Once 2. 2-3 times 3. Four times and above 4. Don't know	
214	What was your reason for attending ANC?	1. For my general health 2. To know the condition of the pregnancy 3. For vaccination only 4. For follow up 5. To get advice on nutrition 6. I don't know	
215	Did you receive any advice or counseling from health service providers during your ANC visit?	1. Yes 2. No	→ 301
216	What advice did you get?	1. Advice on danger signs 2. Advice on nutrition 3. Advice on Birth preparedness and complication readiness(saving money, identifying mode of transportation, identifying facility for delivery, identifying skilled birth attendance) 4. Advise on Breast feeding 5. Advise on malaria prevention 6. Other, specify-----	

3. KNOWLEDGE OF PREGNANT WOMEN ON KEY DANGER SIGNS DURING PREGNANCY, LABOR/CHILD BIRTH, AND THE POST-PARTUM PERIOD IN AR-BA MINCH ZURIA WOREDA.

S.NO	Question	Response	Remark
301	In your opinion, can unforeseen problems related to pregnancy occur during any pregnancy or childbirth that could endanger the life of a woman?	1. Yes 2. No 3. Don't know	→ Q401
302	Have you ever heard about some serious health problems that can occur during pregnancy?	1. Yes 2. No	→ Q305
303	In your opinion, what are some serious health problems that can occur during pregnancy that could endanger the life of a pregnant woman?	1. Vaginal bleeding 2. Swollen hands/face 3. Blurred vision 4. Other, specify-----	
304	In your opinion, could a woman die from [this problem] any of these problems?	1. Yes 2. No	

305	Have you ever heard about some serious health problems that can occur during labor/child birth?	1.Yes 2.No	→ Q308
306	In your opinion, what are some serious health problems that can occur during labor and child birth that could endanger the life of a pregnant woman?	1. Severe vaginal bleeding 2. Prolonged labor(Labor lasting more than 12 hours) 3. Convulsion(unusual body movement) 4. Retained placenta(placenta retained for more than or equal to 30 minutes after delivery of the fetus) 5. Others, specify-----	
307	In your opinion, could a woman die from [this problem] any of these problems?	1. Yes 2. No	
308	Have you ever heard about some serious health problems that can occur during the post-partum period?	1. Yes 2. No	→ Q401
309	In your opinion, what are some serious health problems that can occur during the postpartum period that could endanger the life of the woman?	1. Severe vaginal bleeding, 2. Foul-smelling vaginal discharge 3. High fever 4. Others, Specify-----	
310	In your opinion, could a woman die from [this problem] any of these problems?	1.Yes 2.No	

4.AWARENESS AND PRACTICE OF PREGNANT WOMEN ON PREPARATION FOR BIRTH AND ITS COMPLICATIONS IN ARBA MINCH ZURIA WOREDA.

S.N	Question	Response	Remark
401	In your opinion, what are some things a woman can do to prepare for birth?	1. Saving money 2. Identifying mode of transportation 3. Identifying skilled provider 4. Identifying health facility for delivery 5. Identifying blood donor 6. Others-----	
402	Have you made some arrangements regarding preparations for birth and its complications?	1. Yes 2. No	→ 405

403	Which arrangements have you or your family made for the birth of this child?	<ol style="list-style-type: none"> 1. Food like grains for porridge 2. New blade for cord cutting 3. Clothes for new born 4. Cleaning the room for delivery 5. Identified helper during pregnancy 6. Saved money 7. Identified health facility for delivery(health center or hospital) 8. Identified a mode of transportation(arranged for a means of transport like ambulance or other public transports) 9. Identified a skilled provider (Midwife/nurse/health officer/physician) 10. Identified a blood donor 	
404	Where do you plan to give birth?	<ol style="list-style-type: none"> 1. At home 2. At nearby health facility 3. I don't know 	

5. Household Food Insecurity Access Scale (HFIAS) Measurement Tool adopted from FANTA III

S.N	Question	Response options	code
501-A	In the past four weeks, did you worry that your household would not have enough food?	0 = No (skip to Q502-A) 1=Yes __
501-B	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks) __
502-A	In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	0=no(skip to Q 503-A) 1=Yes __
502-B	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past __

		four weeks) 3 = Often (more than ten times in the past four weeks)	
503-A	In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?	0=no(skip to 504-A) 1=Yes _
503-B	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 =Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks) _
504-A	In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources?	0=no(skip to 505-A) 1=Yes _
504-B	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3= Often (more than ten times in the past four weeks) _
505-A	In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	0=no(skip to 506-A) 1=Yes _
505-B	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) _

		3 = Often (more than ten times in the past four weeks)	
--	--	--	--

506-A	In the past four weeks, did you or any other household member have to eat fewer meals in a day because there was not enough food?	0=no(skip to 507-A) 1=Yes _
-------	---	------------------------------	--------

506-B	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks) _
-------	----------------------------	--	--------

507-A	In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?	0=no(skip to 508-A) 1=Yes _
-------	---	------------------------------	--------

507-B	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks) _
-------	----------------------------	--	--------

508-A	In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?	0=no(skip to 509-A) 1=Yes _
-------	--	------------------------------	--------

508-B	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks) _
-------	----------------------------	--	--------

509-A	In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?	0=no 1=Yes _
509-B	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks) _

6. HOUSEHOLD CHARACTERISTICS

Now I would like to ask you some questions about your household.

601. Approximately, how much of these products did your household produced and sold during the last one year?

1. Teff (in quintals) _____ 2. Corn (in quintals) _____
 3. Wheat (in quintals) _____ 4. Peas (in quintals) _____
 5. Banana sold in Birr _____ 6. Others (specify) _____

602. What is the main material of the floor? Record observation.

1. Earth/Sand 2. Dung 3. Cement 4. Carpet 5. Other (Specify).....

603. What is the main source of drinking water for members of your household?

1. Piped water 2. Water from open well 3. Water from covered well 4. Spring 5. River/stream
 6. Other (specify)

604. What kind of toilet facilities do you have in your home?

1. Traditional pit toilet 2. Ventilated improved pit (VIP) latrine 3. No facility/bush/field 4. Other (Specify).....

605. What type of fuel do you mainly use for cooking in your household?

1. Electricity 2. Kerosene 3. Charcoal 4. Firewood, straw 5. Dung 6. Other (Specify) _____

606. Does your household have electricity? 1. Yes 2. No

607. Does your household own:

1. A radio that is in working order? 1. Yes 2. No
 2. A television that is in working order? 1. Yes 2. No

608. Does any member of your household own:

1. A cell phone? 1. Yes 2. No
 2. A bicycle? 1. Yes 2. No
 3. An animal-drawn cart? 1. Yes 2. No

609. Does any member of this household own any agricultural land? 1. Yes 2. No

610. How many (Local units) of agricultural land do members of this household own?

1. Local unit 2. Don't know

611. Does this household own any livestock, herds, other farm animals, or poultry?

1. Yes 2. No

612. How many of the following animals do this household own?

1. Milk cows, oxen or bulls 2. Horses, donkeys, or mules 3. Goats 4. Sheep 5. Chickens
6. Beehives 7. Don't know

613. Does any member of this household have a bank or microfinance saving account?

1. Yes 2.No

614. Is your household receiving cash or food from the Safety Net Program? 1. Yes 2.No

Thank you!

12.2. FGD topic guide

Part 1. Introduction

At this point, we would like to ask you to introduce yourself to the rest of the group. Let us start with the research team (Name, age, education status) and each of you please tell me your name, how long you have lived in this area and your job.

Part 2. Warm up questions

1. Next we would like to hear a little about your experience or knowledge about birth preparedness and complication readiness.

1.1. Who can tell us about birth preparedness and complication readiness?

1.2. Who can tell us about its elements?

- Probes** 1. Would you explain further 2. Would you give me an example?
3. Has anyone else had similar ideas? 4. Is there anything else?
5. "I don't understand."

Part 3: Body of the discussion

3.1. Do you think that a healthy pregnant woman should be prepared for birth and its complications? 1. Yes, why? 2. No, why?

3.2. What are the primary reasons pregnant women should prepare for birth and its complications?

- Probes** 1. Would you explain further? 2. Has anyone else had similar idea?
3. Is there anything else? 4. "I don't understand."

3.3. When do you think that you /your household are prepared for birth and its complications?

- Probes.** 1. Would you explain further? 2. Would you give me an example?
3. Has anyone else had similar experience 4. Is there anything else?
5. "I don't understand."

3.4. What are the reasons or barriers which hinder you from preparing for birth and its complications? Your opinion on BP/CR from local, cultural or religious point of view?

- Probes** 1. Would you explain further? 2. Would you give me an example? 3. Has anyone else had similar experience? 4. Is there anything else? 5. "I don't understand."

Ending questions

Are there any issues, questions, comments that you would like to raise or points you want to add?

Debriefing

I would like to thank you for your participation. I also want to restate that what you have shared with us is confidential. No part of our discussion that includes names or other identifying information will be used in any reports, displays or other publicly accessible media coming from this research. Finally, I want to provide you with a chance to ask any questions that you might have about this research. Do you have any questions for me?

"Thank You!!"

FGD TOPIC GUIDE FOR HEALTH PROFESSIONALS

1. What are the reasons or barriers which hinder your clients (pregnant women) from preparing for birth and its complications? Your opinion on BP/CR from your experience, your client's local, cultural or religious point of view?

- Probes** 1. Would you explain further? 2. Would you give me an example?
3. Has anyone else had similar experience? 4. Is there anything else? 5. "I don't understand."

2. How do you see the advices that you give for pregnant women and their acceptance? When? How? What elements do you focus on?

- Probes** 1. Would you explain further? 2. Would you give me an example?
3. Has anyone else had similar experience? 4. Is there anything else?
5. "I don't understand."

12.3. Gammotho version questionnaire

JIMMAA YUNIVERESTEE

DEEREE TSENAENE HIKIMINAA COLLOGE

KEETHA ASSA NE DEREE TSENA TIMIRITHE KIFILEE

Oyichoo warakate phayidhoo _____

Keetha Kutsiree _____

Woreda Sunissa _____

Kabalee _____

BOLLA BOLLA YOOTA

DUNNAN GIGOO FORMEE

Loo7ho akideti/feyideti. Ta sunisiyi _____.

Tany hayisan yiday Jimmaa yunversitifa yida tsinate asatas entena ochoota ochanawusiko. Ochozi Arbaa Mincee Zuriaya woredan dizza macca asatti yello wodepha sinthee ayi ginna gigeetizakoninne aeranausekko .Ta entennara hasaaenay naa kantsetesiy ne nayitaa ayoo gidoy ayi malizakonine soo katsa malay wanidakonnin aeranawusikko. Hayssa tsinatezapha betiza wutsetey macha asatas tsenna molissanas goaes. Ne hayissa tsinatezan geliday etsa kessinikko. Ne koyiza gidikko Ta nenna gutsa ochoota ochanaa , akaye gikkonne agana dandaessa; nee koyidason aassa agana dandaessa .Nu gam-iaaena gizey oyidhu tama dakikapha darena. Hayissa ossozan doo asataphee hara asiy ne ochetida yootaza siyeena. Ne sunisiyikka ochoo warakateza bolla tsafeeteena. Ochooza nu wurisidapha guyee ,nees harra ochoyi dikko ,nu adirashay warakate bolla diza gishiee ezan nunna deemmana dandhaaesa. Ne wozanepha zarikko nus wuris loo7ho tsena ogeey betannayissa aerra.

Zarranauees kooyayi?

Aaea

Akkaye

Galata Aeakka!

Galassa _____

Oyichaa asaa suntha _____

Xakkoo/firmmaa _____

**1. ARBAMINCCE ZURA WORADAN KANSERA DIZZA MACHATAS ASSATETSA
BAGGA OYCHOO**

Phayidho Tara	Oychoo	Zarro	Guja mishi
101	Hayi nes layithiy aphunne?	Layitsa kumetsan.....	
102	Awo wossa keethan kalay?	1. Orthodoxice 2. Amannee 4. Eslamee 5. Haray dikko (yoota) -----	
103	Azinna geladiy? Gilen dayinne?, gelada dayi? gelin azinay hayikidene? azinnara shaketa dayi?	1. Gela dayse 2. Gilen dayse 3. Shaketta dayise 4. Gelin azinay hayikiddes	
104	Hayi ha sateen ne azinara/laggera dayyi?	1. Aaea 2. Akayee	
105	Ossoy nes aze?	1. Gosha asse 2. Soo ayoo 3. Tamaree 4. Kawhoo keethan osancha 5. Kawho keethaphe harason osancha 6. ossoy bayintha assa 7. Gilee osso 8. Haray dikko (yoota)-----	
106	Tsaphoy nes azzee?	1. Gammo 2. Zaise 3. Wolaiti 4. Amara 5. Haray dikko (yootha) ,.....	
107	Timihirtee darajayi nes aphune?	1. Tamarabeikke 2. tsufeera nibabera aerayis 3. Koyirro sayikille (kifillee 1-4) 4. Namaanisso sayikilee (kiffillee 4-8) 5. High schoole ne yuniversiti giggo timirhitee (Grade 9-12) 6. colloge ne yuniversiti daraja timirtee	
108	Ne dusan aeredo wayiae aeray?	1. aaea 2. Akayee	→ 109
109	Awde awde wayiayi? Wuri galas? ,Gutses gishin, saminthan esino?, akaye gikko saminthan esinaka wayieekke?	1. Wuri galas 2. Gutses gishin, saminthan esino 3. Saminthan esinaka wayieakke 4. Haray dikko (yoota) _____	

2. Arbaa minccee zurra woradan kantseera dizza machatas kantsetetha mirmera ne tarikee ochoo.

Phayidh tara	Ochoo	Zarro	Guja mishi
201	Hayii nenni kantherra dayii?	1. Aaea 2.Akayee	
202	Ne kanthetishin nes aphune layithee?	-----laythikko	
203	Hayithiy nes aphunitho kanthetethe?	----- kanthessa	
204	Apunee tohho yella aarray?yelloo	koyiroo kantsetidayita ochoofa
205	Ne kanthethin nepha wodhiy aerizee?	1.Aaea 2.Akayee	
206	Hayi gathsoo ne yelopha hayikki yelethiday dizee?	1.Aaea 2.Akayee	koyiroo kantsetidayita ochoofa
207	Hayisafa sinthee yeelida gidikko, awan yeeladi?	1.Ta soone 2.Tsenna keethan	→ 209 koyiroo kantsetidayita ochoofa
208	Soone yeelida kidikko,ayi mikinnateen soonne yeeladi?	1.Mitsay gamuoontta gisha 2.Sinthee soone lo7hora yeelidha gishi 3.Waga darothanne 4.Bahileen aerathi dizza gishi 5.Tsenna keethaa ossoo bagga tsiratee meethoy dizza gishi 6.Kanthetesan methoy denna gidda gishii 7.Tseena keethiy hakkidda gishi 8.Haray dikko(yootha)----- -----	
209	Tsena keethan yeelida giddikko, ayyi mikinnateen soonne yeeladi?	1.Mitsay gammiehinn 2.Loo7ho madhoo demanawus 3.Tsenna keethan yelana mala zooree emmin 4.Sinthe soone yeelida woden	

		etha methoy gakidda gishi 5.Sinthee lo7ho wutsetee bey- idha gishi 6.Tseenna keethiy soo matan dizza gishi 7.Haraydikko(yootha).....	
208	Wanida assee nenna madhidi yeeliday?	1.Dabbo/kaalitha assa/hilla machata 2.Tseena extenshinee 3.Yelissiza nurse- ta/nursee/tsenna mokon- ninne/Doctore	
211	Ne dusan kanthetetha mirmera gishin siyadiy?	1. Aaea 2. Akaye	→ 301
212	Hayissa kanthetessan mirmara xakameetha aerayi?	1. Aaea 2. Akayee	→ 301
213	Hayissa kanthessan apunne to7ho mirmaras badiy?	1. Esih to7ho 2.2-3 to7ho 3.Oyidhu to7ho 4.aerayibekke	
214	Mirmara ayi mikiniaten badiy?	1.Tas mule tsenas 2.Kantseethesa hunetha aer- anaw 3.Kitibatee aekanaw 4.Mirmara kalanaw 5.Musa bagga zooree aekan- aw 6.aerikke	
215	Mirmara bolla nes zorre emetid- hee?	4. aaea 5. akayee	→ 301
216	Ayi zooree aekadhiyi?	1. Detso milikitetha 2. Katsha zooree 3.Yello giggoo bagga 4.Dhanthi dhanithana ogge 5.Wobba zaroo oggee 6.Haray dikko(yootha)-----	

3. Arbamince zura woradan kanthera dizza machatas kanthethessa woden,yeloo woden ,ne yelidapha guyen methothizza wanna wanna deetho milikitetha bolla dizza aerathessa ochoo

Phayidho tara	Ochoo	Zaroo	Guja mishi
301	Nee kophanne ,nee kantheerra dishin,woyikko yello bolla dishishinne woyikko hesaphee guyyee detssso metho bessizza milikitethiy danna gadda hirrgayyi?	1.Aaea 2.Akayee	→ 401
302	Ne dusan kanthera dishin gakanna dandaeiza detso milikitetha siya aeray?	1.Aaea 2.Akayee	→ 305
303	Ayi hunethata woyinikko milikitetha aeray?	1.Bazzo medhapha suthiy gogikko 2.Kushey woy sinthey kitsikko 3.Ayiphe bolla tselanaus methikko 4.Haray dikko(yootha)-----	
304	Nee hayissaphe gannan tseggidda milikitettiy ayiyyo wodhantho?	1.Aaea 2.Akayee	
305	Ne dusan yeloo bolla gakanna dandaeizza detso milikitetha siya aeray?	1.Aaea 2.Akayee	→ 308
306	Ayi hunethata woyinikko milikitetha aeray?	1.Bazzo medhapha darro suthiy goggikko 2.Mitsay gamihikko(>12 saateepha) 3.Bollay shochetikko 4.Yelloopha guyee doayi gamihikko 5.Haray dikko(yootha)-----	
307	Nee hayissaphe gannan tseggidda milikitettiy ayiyyo wodhandetho?	1.Aaea 2.Akayee	→ 401
308	Ne dusan na yelli yegidapha guyee gakanna dandaeizza detssso milikitetha siya aeray?	1.Aaea 2.Akayee	
309	Ayi hunethata woyinikko milikitetha aeray?	1.Bazzo medhapha darro suthiy gogikko 2. Bazzo medhapha tsinkko mishiy goggikko 3.Michay daridhi dikko 4.Haray dikko(yootha)-----	
310	Nee hayissaphe gannan tseggidda milikitettiy ayiyyo wdhandetho?	1.Aaea 2.Akayee	

4. Arbaminchee zura woradan kanthera dizza machatha yellopha sinthee koshiza giggo bolla aerathethanne othoo ochoo

Phayiddo tara	Ochoo	zarroo	Guja mishi
401	Yeloopha sinthee giganaw ayi osotha othikko lo7hoo gay?	1. Birra shisho 2. Transportee sinthethidy gigisho 3. Yelissanna hakimme aeridy gamiho 4. Yelana botta aeridy gamiho 5. Suthiy koshikko emana assa aeridy gamiho	
402	Ne soo gidhon ne yelana-paha sinthee yellos gigeethets mangadi?	1. Aaea 2. Akayee	→ 404
403	Ayi ayi malla giggo gig-gadi?	1. Kodhe katsi gigisadis 2. Orasa milaccee shamadis 3. Dudha nas mayho shamadis 4. Yello olla Fithadis 5. Tanna madhanna as-satha gigisadis 6. Birra shishadis 7. Yellanna heera doradhis(Tsenna tsabba/hospitalle) 8. Yello olla bana oggee molisadis(ambulancee/makinna/garre) 9. Yello boolla madanna arra hilla doradis(nurssetha/tsenna mokkoninne/doctorre) 10. Suthiy koshikko emmana asse doradis	
404	Awan yellanna kophadiy?	1. Ta soonne 2. Mathan dizza tsenna keethan	

5. Arbaminchee zura woradan kanthera dizza machatha Soo gidhon dizza assathas kathsa bagga oychizza ochoo fanta 3^{tho}fa aekketida.

Phayidhoo Tara	Ochoo	Zarroo	Coddee
501-A	Adhida esiy Agina gidon soophe kathiy wurandes/gidenna gada hirgaa aeray?	0 = Akayee (oychoo 502-A bolla baa) 1= Aaea	... _
501-B	Awude awude haysiy haniday?	1 = Guthaa kamma (esinho woyikko namuhu to7hoo adho agina gidon) 2 = Adhi adhida kamma (hethafe tamuuhu to7ho adho agina gidon) 3 = Darro kamma	... _

		(Tamuhu to7hophadokka adho agina gidon)	
502-A	Adhida esiy Agina gidon,ne woyikko haraa soo gidon dizza asaphe ente mana koyizza kathe wolkka dhayon dendidaysan montha agidi aerathi?	0 = Akayee (oychoo 503-A bolla baa) 1= Aaea __
502-B	Awude awude haysiy haniday?	1 = Guthaa kamma (esinho woyikko namuhu to7hoo adho agina gidon) 2 = Adhi adhida kamma (hethafe tamuhu to7ho adho agina gidon) 3 = Darro kamma (Tamuhu to7hophadokka adho agina gidon) __
503-A	Adhida esiy Agina gidon,ne woyikko haraa soo gidon dizza asaphe wolkka dhayon dendidaysan gutha kammho kathsa musas gakki aerethiy?	0 = Akayee (oychoo 504-A bolla baa) 1= Aaea __
503-B	Awude awude haysiy haniday?	1 = Guthaa kamma (esinho woyikko namuhu to7hoo adho agina gidon) 2 = Adhi adhida kamma (hethafe tamuhu to7ho adho agina gidon) 3 = Darro kamma (Tamuhu to7hophadokka adho agina gidon) __
504-A	Adhida esiy Agina gidon,ne woyikko haraa soo gidon dizza asaphe wolkka dhayon dendidaysan ente manna koyonita kathatha midhihiy aeratiy?	0 = Akayee (oychoo 505-A bolla baa) 1= Aaea __
504-B	Awude awude haysiy haniday?	1 = Guthaa kamma (esinho woyikko namuhu to7hoo adho agina gidon) 2 = Adhi adhida kamma (hethafe tamuhu to7ho adho agina gidon) 3 = Darro kamma (Tamuhu to7hophadokka adho agina gidon) __
505-A	Adhida esiy Agina gidon,ne woyikko	0 = Akayee (oychoo 506-A bolla baa) __

	haraa soo gidon dizza asaphe wolka dhayon dendidaysan ente ma- na koyizaysapha gutha kathsa midiy aeratiy?	1= Aaea	
505-B	Awude awude haysiy haniday?	1 = Guthaa kamma (esinho woyikko namuhu to7hoo adho agina gidon) 2 = Adhi adhida kamma (hethafe tamuhu to7ho adho agina gidon) 3 = Darro kamma (Tamuhu to7hopho dokka adho agina gidon)	

		 _
506-A	Adhida esiy Agina gidon,neniy woyikko haraa soo gidon dizza asaphe katha dhayon dendidaysan ente esi galasan manna koyizaysapha gutha to7ho midiy aeratiy?	0 = Akayee (oychoo 507-A bolla baa) 1= Aaea _
506-B	Awude awude haysiy haniday?	1 = Guthaa kamma (esinho woyikko namu- hu to7hoo adho agina gidon) 2 = Adhi adhida kamma (hethafe tamuhu to7ho adho agina gidon) 3 = Darro kamma (Tamuhu to7hopho dokka adho agina gidon) _
507-A	Adhida esiy Agina gidon, wolka dhayon dendidaysan manna kathi ente soophe dhayi aerizze?	0 = Akayee (oychoo 508-A bolla baa) 1= Aaea _
507-B	Awude awude haysiy haniday?	1 = Guthaa kamma (esinho woyikko namu- hu to7hoo adho agina gidon) 2 = Adhi adhida kamma (hethafe tamuhu to7ho _

		adho agina gidon) 3 = Darro kamma (Tamuhu to7hophadokka adho agina gidon)	
508-A	Adhida esiy Agina gidon, neny woyikko haraa soo gidon dizza asaphe katha dhayon dendidaysan, gafishee kawoo montha dhisk aeratiy?	0 = Akayee (oychoo 509-A bolla baa) 1= Aaea __
508-B	Awude awude haysiy haniday?	1 = Guthaa kamma (esinho woyikko namuhu to7hoo adho agina gidon) 2 = Adhi adhida kamma (hethafe tamuhu to7ho adho agina gidon) 3 = Darro kamma (Tamuhu to7hophadokka adho agina gidon) __
509-A	Adhida esiy Agina gidon, ne woyikko haraa soo gidon dizza asaphe katha dhayon dendidaysan, galasinne omarthinne katha montha feyyi akiyy aeratiy?	0 = Akayee (oychoo 603-A bolla baa) 1= Aaea __
509-B	Awude awude haysiy haniday?	1 = Guthaa kamma (esinho woyikko namuhu to7hoo adho agina gidon) 2 = Adhi adhida kamma (hethafe tamuhu to7ho adho agina gidon) 3 = Darro kamma (Tamuhu to7hophadokka adho agina gidon) __

6. SOO GISHI OYCHISA OYICHOO

Hayi tae nenna ne soo gido gishi oyichana gaey.

601. Adidha layitha gidon ,haysapha dugen dizza kathatafe ayyi ginna mirtee bayzidetiyy /shishidetediy?

- | | |
|----------------------------|--------------------------------|
| 1. Gashee (quntalen) _____ | 2. badalla (quntalen) _____ |
| 3. Gistee (quntalen) _____ | 4. Atarra(quntalen) _____ |
| 5. Muzze(Birran) _____ | 6. Harray dikko (yootha) _____ |

602. Ente soone gaddezi azaphe othethidee ? Beyyada tsapha.
 1. Gadekko 2. Mehe oshaphe 3. Siminthophe 4. Mintaphe 5. Harray dikko (yootha) _____
603. Soo gidone hathe awophe demmidethi?
 1. Banbuwephe 2. Dooyya ollaphe 3. Kamethida ollaphe 4. fulthophe 5. shorephe
 6. Harray dikko (yootha) _____
604. Ente soone ayyi malla shesha keethiy Dizze?
 1. Bokethida sheshaa keethe 2. Charkoo gelithizzaayssa 3. Kareen demba bolla 4. Harray dikko (yootha) _____
605. Ente soone kathee kathanaw ayyi goaethethy?
 1. Koronthe 2. lamba 3. kasale 4. Mithee 5. Mehe oshaa 6. Harray dikko (yootha) _____
606. Ente soo gidon koronthey dizze? 1. Aaea 2. Akayee
607. Ente soone giddon:
 1. Othizza eradoy dizze ? 1. Aaea 2. Akayee
 2. Othizza televisioney dizze? 1. Aaea 2. Akayee
608. Ente soo gidon dizza asataphee :
 1. Mobiley dizze ? 1. Aaea 2. Akayee
 2. Biskileteyy dizze? 1. Aaea 2. Akayee
 3. Garrey dizze? 1. Aaea 2. Akayee
609. Ente soo gidon dizza asaphe gadeyy ezas dizza assiy dizze? 1. Aaea 2. Akayee
610. Ayyi ginna gadeey dizze enthees?
 1. Hectare /karre 2. Tae aerikke
611. Ente soo gidon dizza asaphe mehe /soo gidho harroy ezzas dizzay dizze?
 1. Aaea 2. Akayee
612. Hayisaphe dugen dizza mehetaphe ayi ayi gina mehey dizze?
 1. kacce mehe--- 2. Korra mehe 3. deshe 4. Dorse 5. kutto 7. Tae aerikke
613. Ente soo gidon dizza asaphee bankee woykko microfinnannse daphitarey dizzay dizze? 1. Aaea 2. Akayee
614. Ente sooyye birra woykko kathee safetynatte programmepha goaethizze? 1. Aaea 2. Akayee

Galath7oose!!