

**STRATEGIES FOR IMPROVING BIRTH PREPAREDNESS AMONG PREGNANT  
WOMEN ATTENDING ANTENATAL CARE CLINICS AT PUBLIC  
HEALTHCARE FACILITIES OF ARSI ZONE IN OROMIA, ETHIOPIA**

by

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**SUPERVISOR: PROF T.G. LUMADI**

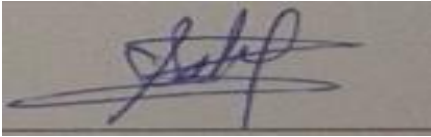
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## DECLARATION

I declare that **STRATEGIES FOR IMPROVING BIRTH PREPAREDNESS AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE CLINICS AT PUBLIC HEALTH FACILITIES OF ARSI ZONE IN OROMIA, ETHIOPIA** is my own work and all the sources that I have used are indicated and acknowledged by means of complete references and this work has not been submitted before for any other degree at any University.

Date 11 January 2024

Signature

A rectangular box containing a handwritten signature in blue ink. The signature is stylized and appears to read 'Solomon Tejineh'.

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## ABSTRACT

The purpose of this study was to develop strategies for improving birth preparedness and complication readiness (BPCR) among pregnant women attending antenatal care (ANC) clinics at public health facilities of Arsi Zone in Oromia, Ethiopia.

The findings of this study serve as a guide to develop strategies to improve BPCR and reduce maternal and neonatal morbidities and mortalities.

**Setting:** The study was conducted at five public health facilities in Arsi Zone, Oromia, Ethiopia.

**Study population and sample:** The population for this study consisted of pregnant women attending ANC clinics, as well as health professionals (key informants) in selected public health facilities. In the quantitative part of the study, a systematic random sampling technique was used to select 1 014 pregnant women, whereas in the qualitative part, purposive sampling was used to select 36 pregnant women for three focus group discussions and 9 health professionals were selected for key informant in-depth interviews.

**Study design:** A sequential explanatory mixed methods approach was applied.

**Data collection and data analysis methods:** A sequential explanatory mixed method was employed. Accordingly, a questionnaire was used to collect data from 1 014 pregnant women. The data was collected from January to February 2022. The quantitative data was entered into Epi info version 3.5.4 and transferred to SPSS version 26 for further cleaning and analysis of the results. Three focus groups and nine key informant interviews were conducted using an interview guide. ATLAS.ti version 8 was used for further analysis of qualitative data.

**Result:** In this study, of the 1 014 pregnant women, 772 (76.1%) were aware of BPCR, 869 (85.7%) were prepared for birth for their current pregnancy, 634 (72.9%) had

identified the place of birth, 330 (38.9%) had saved money for emergencies and 156 (18%) had identified skilled birth attendants to provide care during birth.

Among the predictor variables, the age of the pregnant women, pregnant women who had mobile phones and pregnant women who had their husband's support were some of the variables significantly associated with the use of BPCR.

The quantitative findings were supported by the focus groups and key informant interviews. The themes from the focus groups with pregnant women and interviews with health professionals included the opinions and perceptions of the pregnant women and the understanding of health professionals regarding BPCR. The level of BPCR in pregnant women for the major components of BPCR in this study is low. The Ministry of Health, the regional health office, the district health office, the health facility, and the health professionals need to increase awareness among pregnant women about BPCR.

**Key words:** Antenatal Care; Birth Preparedness; Obstetric Danger Signs; Public Health Facility; Pregnant Women; Strategy

## OKUCASHUNIWE

Inhloso yalolu cwaningo ukuthi kusungulwe amasu okwenza ngcono indlela yokulungiselela nokumelana nokuphambana kwezinto ngesikhathi sokubeletha (*BPCR*) kwabesifazane abakhulelwe abahambela imitholampilo yokunakekelwa kwabakhulelwe (*ANC*) emitholampilo kahulumeni e-*Arsi Zone e-Oromia*, ezweni laseTopiya.

Okutholwe kulolu cwaningo kusebenza njengomhlahlandlela wokusungulwa kwamasu okwenza ngcono i-*BPCR* nokunciphisa ukugula nokushona komama kanye nezinsana ezizelwe.

**Ukulungiselela:** Lolu cwaningo lwenziwe ezikhungweni zezempilo zikahulumeni ezinhlanu ezise-*Arsi Zone, e-Oromia*, ezweni laseTopiya.

**Inani labantu namasampula ocwaningo:** Inani labantu okwenziwe ngabo lolu cwaningo belihlanganisa abesifazane abakhulelwe abahambela imitholampilo ye-*ANC*, kanye nabasebenzi bezempilo (abanolwazi olunzulu) ezikhungweni zezempilo zikahulumeni ezikhethiwe. Engxenyeni yocwaningo lwamanani, kusetshenziswe uhlelo lwamasampula aqoqwe ngokungazelele kwakhethwa abesifazane abakhulelwe abayi-1 014, kanti engxenyeni yocwaningo lwamaqophelo khona, kusetshenziswe amasampula okucacisa inhloso kwakhethwa abesifazane abakhulelwe abangama-36 ngokwamaqoqo amathathu okuxoxiswane nawo kwase kukhethwa nabasebenzi bezempilo abayisi-9 ukuze kutholakale ulwazi olunzulu ngokwezingxoxo ezijulile ezibanjiwe.

**Ukuleleka kocwaningo:** Kusetshenziswe izinhlelo ezixubile ezilandisa ngokulandelana.

**Izindlela zokuqoqwa nokucwaningwa kwemininingwane:** Kusetshenziswe izinhlelo ezixubile ezilandisa ngokulandelana. Ngokuvumelana nalokho, kusetshenziswe uhlu lwemibuzo ukuze kuqoqwe imininingwane kwabesifazane abakhulelwe abayi-1 014. Le mininingwane iqoqwe kusukela ngoMasingana kuya

kuNhlolanja 2022. Imininingwane yamanani ithathwe yafakwa ku-*Epi info version 3.5.4* yase idluliselwa ku-*SPSS version 26* ukuze kuhlelwe futhi kucwaningwe kahle imiphumela. Lapha kuxoxiswane namaqoqo amathathu kwabanjwa izingxoxo ezinzulu eziyisishiyagalolunye kusetshenziswa umhlahlandlela wokuxoxisana. Kuphinde kwasetshenziswa i-*ATLAS.ti version 8* ukuze kucwaningwe kabanzi imininingwane yokuhlolwa kwamaqophelo.

**Umphumela:** Kulolu cwaningo, kutholakale ukuthi kwabesifazane abakhulelwe abayi-1 014, abangama-772 (76.1%) babo bayazi nge-*BPCR*, abangama-869 (85.7%) bona bebekulungiselele ukubeletha ngesikhathi sokukhulelwa kwabo, abangama-634 (72.9%) babo bebeyihlonzile indawo yokubelethela, kanti abangama-330 (38.9%) bazibekele imali yezimo eziphuthumayo bese kuthi abangu-156 (18%) bazihlonzele ababelethisi abanekhono ukuze banakekeleke ngesikhathi sokubeletha.

Phakathi kokuguquguquka kwezinto ezibikezelayo, kubalwa iminyaka yobudala yabesifazane abakhulelwe, abesifazane abakhulelwe abanomakhalekhukhwini kanye nabesifazane abakhulelwe abasekelwa abayeni babo kungezinye zezinto ezihlobene kakhulu nokusebenza kwe-*BPCR*.

Imiphumela yohlelo lokuhlolwa kwamanani yesekelwe yilawo maqoqo okuxoxiswane nawo kanye nezingxoxo ezijulile ezibanjiwe. Imiqondo etholakale kumaqoqo okuxoxiswane nawo ezinkulumweni nabesifazane abakhulelwe ngokunjalo nangokuxoxisana nabasebenzi bezempilo ibandakanya imibono nemicabango yabesifazane abakhulelwe kanjalo nokuqonda kwabasebenzi bezempilo mayelana ne-*BPCR*. Lolu cwaningo luveza ukuthi liphansi kakhulu izinga le-*BPCR* kwabesifazane abakhulelwe ezikhathini eziyingxenywe enkulu maqondana nokuzilungiselela i-*BPCR*. UMnyango Wezempilo, ihhovisi lezempilo lendawo, ihhovisi lezempilo lesifunda, isikhungo sezempilo kanye nabasebenzi bezempilo kudingeka bandise izinhlelo zokuqwashisa abesifazane abakhulelwe ngokwe-*BPCR*.

**Amagama amqoka:** Ukunakekelwa Kwabakhulelwe; Ukulungiselela Ukubeletha; Izimpawu Zengozi Yokubelethisa; Isikhungo Sezempilo Sikahulumeni; Abesifazane Abakhulelwe; Isu Lokusebenza.

## KAKARETSO

Sepheo sa phuputso ena e ne e le ho hlahisa mekgwa ya ho ntlafatsa ho itokisetsa pelehi le ho itokisetsa mathata a pelehi (BPCR) hara baimana ba yang tlhokomelong ya boimana ya pele ho pelehi (ANC) ditleliniking tsa ditsi tsa bophelo bo botle tsa setjhaba tsa sebaka sa Arsi Zone, Oromia, Ethiopia.

Diphumano tsa phuputso ena di sebetsa e le tataiso ya ho hlahisa maano a ho ntlafatsa BPCR le ho fokotsa ho kula le mafu a baimana le masea.

**Tikoloho:** Phuputso e etseditswe ditsing tse hlano tsa bophelo bo botle tsa setjhaba sebakeng sa Arsi Zone, Oromia, Ethiopia.

**Palo ya batho bao phuputso e etswang ho bona le sampole:** Palo ya batho bao phuputso ena e etsetswang ho bona e ne e le ya baimana ba yang ditloleniking tsa ANC, hammoho le ditsebi tsa bophelo bo botle (bafani ba tlhahisoleseding ba ka sehloohong) ditsing tsa bophelo bo botle tse kgethilweng tsa setjhaba. Karolong ya dipalo tsa phuputso, ho ile ha sebediswa mokgwa o hlophisehileng wa ho etsa disampole ho kgetha baimana ba 1 014, athe karolong ya boleng, ho ile ha sebediswa disampole tse reretsweng ho kgetha baimana ba 36 bakeng sa dipuisano tsa dihlopha tse tharo mme ho ile ha kgethwa ditsebi tse 9 tsa bophelo bo botle bakeng sa batho ba fanang ka tlhahisoleseding ba dipuisano tse tebileng.

**Moralo wa phuputso:** Ho sebedisitswe katamelo ya ho hlalosa ka tatellano wa mekgwa e tswakilweng.

**Pokello ya datha le mekgwa ya manollo ya datha:** Ho ile ha sebediswa katamelo ya ho hlalosa ka tatellano wa mekgwa e tswakilweng. Ka hona, ho ile ha sebediswa lethathamo la dipotso ho bokella datha ho tswa ho baimana ba 1 014. Datha e bokelletswe ho tloha ka Pherekgong ho ya ho Hlakola 2022. Datha ya dipalo e kentswe ho mofuta wa Epi info 3.5.4 mme ya fetisetswa ho mofuta wa SPSS 26 bakeng sa ho hlwekiswa le manollo ya diphetho. Dihlopha tse tharo tseo ho shebanweng le tsona le dipuisano tsa batho ba robong ba fanang ka tlhahisoleseding



ba ka sehloohong di entswe ho sebediswa tataiso ya dipuisano. Mofuta wa 8 wa ATLAS.ti o ile wa sebediswa bakeng sa tlhahlobo e tswelang pele ya datha ya boleng.

**Sepheho:** Phuputsong ena, ho basadi ba 1 014 ba baimane, ba 772 (76.1%) ba ne ba tseba ka BPCR, ba 869 (85.7%) ba ne ba itokiseditse pelehi bakeng sa boimana ba bona ba hona jwale, ba 634 (72.9%) ba ne ba hlwaile sebaka sa tswalo, ba 330 (38.9%) ba ne ba bolokile tjhelete bakeng sa maemo a tshohanyetso mme ba 156 (18%) ba ne ba hlwaile bapepisi ba nang le tsebo ho fana ka tlhokomelo nakong ya pelehi.

Hara dintho tse fapaneng tse tataisang, dilemo tsa baimana, baimana ba neng ba na le mehala ya thekeng le baimana ba neng ba na le tshehetso ya banna ba bona e ne e le dintho tse fapaneng tse amanang haholo le tshebediso ya BPCR.

Diphumano tsa dipalo di ile tsa tshehetswa ke dihlopha tseo ho shebanweng le tsona le dipuisano tsa ditsebi tse ka sehloohong. Dihlooho tse tswang dihlopheng tseo ho shebanweng le tsona tsa basadi ba baimana le dipuisano le ditsebi tsa bophelo bo botle di ne di kenyelletsa maikutlo le mehopolo ya basadi ba baimana le kutlwisiso ya litsebi tsa bophelo bo botle mabapi le BPCR. Boemo ba BPCR basading ba baimana bakeng sa dikarolo tse kgolo tsa BPCR phuputsong ena bo tlase. Lekala la Bophelo bo botle, ofisi ya bophelo ya lebatowa, ofisi ya bophelo ya setereke, setsi sa bophelo bo botle le ditsebi tsa bophelo bo botle ba hloka ho lemosa baimana ka BPCR.

**Mantswe a sehlooho:** Tlhokomelo ya Nakong ya Boimana; Ho Itokisetsa Pelehi; Matshwao a Kotsi ya Boimana; Setsi sa Bophelo bo Botle ba Setjhaba; Basadi ba Baimana; Leano

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## **DEDICATION**

I dedicate this research report to all mothers who died due to obstetric complications and never had access to any health facilities to treat the complications of pregnancy.

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## LIST OF ABBREVIATION AND ACRONYMS

APH	Antepartum Haemorrhage
ANC	Antenatal Care
BPCR	Birth Preparedness and Complication Readiness
CDC	Centres for Disease Control and Prevention
CSA	Central Statistical Agency
EDHS	Ethiopian Demography and Health Survey
EMOC	Emergency Obstetric Care
EPHI	Ethiopian Public Health Institute
ETHB	Ethiopian Birr
FGD	Focus Group Discussion
FMOH	Federal Ministry of Health
HBM	Health Belief Model
HEW	Health Extension Worker
HIS	Health Information System
ICPD	International Conference on Population Development
MCH	Maternal and Child Health Care
PHCU	Primary Health Care Unit

PPH	Postpartum Haemorrhage
SDGs	Sustainable Development Goals
SMI	Safe Motherhood Initiative
TBA	Traditional Birth Attendant
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
WDA	Women's Development Army

## **CHAPTER 1: ORIENTATION TO THE STUDY**

### **1.1 INTRODUCTION**

Implementing effective strategies can strengthen the care given around birth, focusing on improving the quality and experience of care to attain birth preparedness (Habte & Woldyohannes 2023:18). According to the study conducted in Ethiopia, BPCR is one of the strategies and tools to identify policy and non-policy-related factors, monitor programme implementation, and improve the effective use of key maternal and neonatal services to decrease maternal and newborn mortality and morbidity. (Gedefa et al 2023: 13).

According to a 2015 world health statistics report, approximately 830 women died every day due to complications during pregnancy and childbirth around the world. Reducing the world maternal mortality rate from 216 per 100,000 births in 2015 to less than 70 per 100,000 births in 2030 is on the agenda to achieve the Third Sustainable Development Goal of reducing maternal death (World Health Statistics 2017:29).

Most maternal deaths are preventable since the necessary medical interventions are well-known. Therefore, increasing women's access to high-quality care is critically important before, during, and after childbirth. Globally, in 2016, during millions of births, the mothers were not assisted by a trained midwife, doctor, or nurse, with only 78% of births attended by a skilled birth attendant (World Health Organisation [WHO] 2017).

The WHO (2016:1) envisions a world where every pregnant woman and newborn receives high-quality care throughout pregnancy, childbirth, and the postnatal period, within the continuum of reproductive care, antenatal care (ANC) provides a platform for critical healthcare functions, including health promotion, screening and diagnosis, and disease prevention, which is established by implementing timely and appropriate evidence-based practices.

Although many signs of progress have been achieved regarding Maternal and Child Health (MCH) in Ethiopia, there are many challenges concerning decreasing maternal mortality, which was 412 per 100000 live births (Ethiopia Demography and Health Survey [EDHS], 2016). Ethiopia is one of five countries that together account for 50% of the world's maternal deaths; 25,000 women die from complications during childbirth every year, and 500,000 women suffer long-term disabilities from pregnancy and childbirth (International Federation of Red Cross & Red Crescent 2014:15).

This study describes and elaborates on the level of birth preparedness at individual levels and in the entire community. Determining the experiences and practices of birth preparedness plays a role in developing strategies to enhance the knowledge and practices to prevent complications that may arise during pregnancy and childbirth. This chapter presents an overview of the study and provides background information to introduce the main issues that motivated the investigator to research this topic. The chapter also introduces the research problems, the research objectives, the significance of the study, the research design, and the research methods of the study.

## **1.2 BACKGROUND INFORMATION ABOUT THE RESEARCH PROBLEM**

Birth preparedness and complication readiness (BPCR) is essential to the ANC package. Birth and complication plans comprise the desired place of birth, the location of the closest facility for the birth, funds for any expenses related to the birth, and in cases of complications, the need to know about the signs indicating the onset of labour as well as the danger signs during pregnancy and after the birth of the baby (WHO 2015:2).

Despite the many impressive gains in maternal health over the past 15 years, most of this vision remains distant, and progress has been extremely uneven across the region, with the poorest and most marginalised women often being excluded. In 75 countries, maternal, newborn, and child deaths are preventable in 95% of the cases, and only 20 countries are on track to meet the maternal mortality goal, and

only 6 of the 20 are in sub-Saharan Africa (Centre for Health and Gender Equity 2015:7).

According to the WHO (2017:3), the ideal is to have a world in which there are no preventable deaths of newborns or stillbirths, where every pregnancy is wanted, every birth is celebrated, and women, babies, and children survive, thrive, and reach their full potential means optimising the health of the mother and the newborn. Implementing effective strategies can strengthen the care given around birth, focusing on improving the quality and experience of care to attain birth preparedness.

Families are at the forefront of providing care for women and newborns, and men also play an important role in safeguarding family health. Parents are important voices for change and shifting social norms (Ho, Mahirah, & Ho 2022:37). The evidence shows that implementing community mobilisation through facilitated participatory learning and action cycles with women's groups is important to improving maternal and newborn health. In rural settings characterised by low access to health services, investing in improved access and quality of care concerning childbirth can generate a triple return on the investment by saving maternal and newborn lives and preventing stillbirths and disabilities (Chou *et al.* 2015:7).

Approximately 75% of all major direct causes of maternal mortality on the African continent are severe bleeding and postpartum, 25% are ascribed to infections usually after childbirth, 15% are caused by high blood pressure during pregnancy, and 7% are due to other complications from delivery (African Union 2017:50).

According to the United Nations (UN) SDG extended report (2022:19), between 2000 and 2017, the global maternal mortality ratio (MMR) decreased by 38%, from 342 deaths to 211 deaths per 100,000 live births. However, despite the positive progress, the progress was uneven globally regarding achieving the global target of reducing MM to fewer than seventy maternal deaths per 100,000 live births in 2030. In 2017, the global lifetime risk of maternal deaths was estimated to be one in 190, and the lifetime risk of maternal deaths due to maternal health

complications was one in 37 in sub-Saharan Africa, compared to one in 7800 in Australia and New Zealand.

According to the factsheets on maternal health in Africa, complications during pregnancy and childbirth are the leading causes of death among adolescent girls aged 15 to 19 years in low- and middle-income countries, resulting in thousands of deaths each year (Maternal Health in Africa 2013). Due to the lack of proper birth preparedness action, many women face a challenge regarding pregnancy outcomes, among which obstructed labour is the major cause of both maternal and newborn morbidity and mortality. Undiagnosed obstructed labour leads to a ruptured uterus, vesicovaginal fistula, or rectovaginal fistula in the mother and higher risks of stillbirth, neonatal asphyxia meconium aspiration syndrome, and other conditions (WHO 2016).

Maternal health is still a critical issue given high priority as part of the UN's agenda to achieve the SDGs. In 2030, a world where women, children, and adolescents in every setting realise their rights by accessing basic health services should be achieved. Among the major interventions, the most urgent is reducing maternal mortality to fewer than seventy per 100,000 live births but not greater than 140 per 100,000 live births in any country, and the newborn mortality should be reduced to at least 12 per 1000 live births (UN 2015).

A study conducted in Uganda reveals that among the pregnant women attending ANC clinics assessed for knowledge and practice of BPCR, 76.5% of the respondents mentioned vaginal bleeding and 62.5% vomiting as danger signs in pregnancy, while 12% did not know any danger signs during pregnancy (Florence, Atuhaire, Nkfusai, Shirinde & Cumber 2019:34).

The Federal Ministry of Ethiopia has implemented many strategies to minimise maternal mortality. Significant progress was observed between the two EDHS' in 2011 and 2016, respectively; for instance, in EDHS (2011), the maternal mortality ratio was 675 per 100,000 live births and 412 per 100,000 live births in EDHS 2016, revealing a 39% reduction in maternal mortality. However, it is still well-recognised



that the enormous burden of maternal mortality in Ethiopia remains a serious challenge for the health sector (EDHS 2011 2016).

The 2019 Ethiopia Mini Demography Health Survey (EMDHS) results show that 74% of women who gave birth in the five years preceding the survey received ANC from a skilled provider at least once for their last pregnancy. Four of the 10 women (43%) had four or more ANC visits for their most recent live births. Urban women were more likely than rural women to have received ANC from a skilled provider, at 85% and 70%, respectively, and to have had four or more ANC visits, at 59% and 37%, respectively. In addition, 46% of births did not take place in health institutions, and 33% of the mothers mentioned that giving birth in a health facility was not counted as a normal process unless there were some complications (EMDHS 2019).

A study conducted in the Abeshige District in Ethiopia found that among the study participants regarding birth preparedness and complication readiness, 328 (73%) identified vaginal bleeding, 139 (31%) swollen hands, and 97 (21.6%) found blurred vision as danger signs during pregnancy, at the same time, the participants in the focus group discussions (FGDs) regarded twin pregnancies as dangerous for the health of the mother (Zepre & Kaba 2017:9).

The government of Ethiopia is committed to improving and maintaining the health status of women, neonates, adolescents, and young people through one of the mechanisms using health extension programmes in all parts of the country. In rural areas, the government focuses on strong community engagement and ownership of the programme by raising awareness, behavioural change communication, community organisation, and mobilisation with their full participation using locally available technologies and skills (FMOH 2016:17).

Despite the progress observed in Ethiopia towards improving maternal health, maternal health problems related to pregnancy and childbirth continue as one of the challenges to success in maternal health service utilisation. According to a study on birth preparedness and complication readiness practices conducted in Adama, Ethiopia, among the participants, only 389 (60%) reported that they had

heard the term “birth preparedness and complication readiness.” A small proportion, 127 (19.8%) of pregnant mothers, mentioned vaginal bleeding as a danger sign during pregnancy and labour (Mekuaninte, Worku & Jember Tesfaye 2016:4).

The Ethiopia Federal Ministry of Health has emphasised strategies of service modalities to the continuum of care approach, which includes essential services for the maternal, newborn, children, adolescent, and young groups. There is also a need to scale up existing high-impact interventions whose population coverage lags behind the set target, such as skilled birth attendance by accessing women of childbearing age, which was approximately 57% of the female population, while 30% of the pregnant women had accessed skilled birth attendants (FMOH 2016).

This study used both quantitative and qualitative research methods with an explanatory study design that explained, described and explored the perceptions and experiences of pregnant women on the birth preparedness services in Oromia, Ethiopia. The findings from this study can guide the development of strategies to improve birth preparedness services.

### **1.3 STATEMENT OF THE RESEARCH PROBLEM**

According to Kush (2015):48, problem statements are short descriptions of the problems to be resolved and the conditions to be improved. According to SAGE pub (2023), statement of a problems identifies the gap between the current state of the problem and the desired state of the target of the process or product. The first condition for solving a problem is to understand the problem and make a statement of the problem. A well-defined description of the problem can also help to perform a root cause analysis to understand why the problem occurred and ensure measures are taken to prevent future problems from occurring.

Despite considerable progress, the end of preventable maternal mortality remains an unfinished task and one of the most critical challenges in the world. In 2017, approximately 810 women died each day from preventable causes related to pregnancy and birth. Between 2000 and 2017, the maternal mortality rate per 100,000 live births decreased by 38 percent. Worldwide, 94 percent of all maternal

deaths occur in low- and middle-income countries; among these, only sub-Saharan Africa accounts for about two-thirds of maternal deaths (UNICEF, WHO & World Bank Group 2019:20).

In Ethiopia, 12,000 women die each year from complications during pregnancy, birth or abortion, and 92,000 newborns die within the first month of life. Most of these deaths could be prevented by appropriate medical care (Guttmacher Institute 2018:1). According to systematic reviews conducted in Ethiopia, the main cause of maternal death is direct maternal death, of which haemorrhage accounts for 29.9% of maternal death in Africa (Wubezier 2018:32).

Low utilisation of BPCR services among pregnant women in Ethiopia is common in all regions; for instance, among pregnant women who attended ANC, a limited number gave birth in health facilities (Habte, Hailegbreal, Melis & Haile 2023: 18). The health facilities found in this study have been reported as a challenge, as the study found in the above. Despite many interventions made, such as maternity waiting areas, expansion of healthcare services, and awareness creation programmes at the community level, maternal and neonatal health challenges are still high. Hence, there is a need to develop strategies to enhance birth preparedness for reducing maternal and neonatal complications and death during pregnancy, childbirth and the postnatal period in Oromia, Ethiopia.

## **1.4 AIM OF THE STUDY**

### **1.4.1 Research purpose**

The purpose of this study is to develop strategies to improve BPCR among pregnant women attending ANC clinics in the Arsi Zone health facilities in Oromia, Ethiopia.

### **1.4.2 Research objectives**

1. To determine the level of BPCR among pregnant women attending ANC clinics in selected health facility of Arsi Zone, Oromia, Ethiopia.

2. To assess the awareness of BPCR practices among pregnant women attending ANC clinics in selected health institutions in Arsi Zone Oromia, Ethiopia.
3. To explore the perceptions of pregnant mothers regarding birth preparedness during pregnancy, childbirth, and the postnatal period at ANC clinics in public health facilities in the Arsi Zone, Oromia, Ethiopia.
4. To assess factors associated with birth preparedness among pregnant women attending ANC clinics in selected Arsi Zone Oromia, Ethiopia health facilities.
5. To develop strategies for improving birth preparedness among pregnant women attending ANC clinics in public health facilities in the Arsi Zone, Oromia, Ethiopia.

### **1.5 RESEARCH QUESTIONS**

1. What is the level of birth preparedness among pregnant women attending antenatal care clinics in public health facilities of Arsi Zone Oromia, Ethiopia?
2. How is the awareness of birth preparedness among pregnant women attending antenatal care clinics in public health facilities of the Arsi Zone, Oromia, Ethiopia?
3. Which factors influence birth preparedness among pregnant women attending the antenatal care clinic in the Arsi Zone, Oromia, Ethiopia, public health facilities?
4. What are pregnant women's perceptions of birth preparedness during pregnancy, childbirth, and postpartum?
5. What are the possible strategies and mechanisms to improve birth preparedness among pregnant women attending antenatal care clinics in the public health facilities of the Arsi Zone in Oromia, Ethiopia?

## 1.6 SIGNIFICANCE OF THE STUDY

The researcher envisions that the findings of the study can help to understand the level of perception, experience, and utilisation of BPCR among pregnant women. It also helps to identify the perceptions of health professionals towards the services given and that contribute to the body of knowledge in maternal healthcare during pregnancy, delivery, and postpartum periods. The findings led to the development of strategies that would improve birth preparedness services rendered by health institutions. The strategies can contribute to improving health system design and implementing interventions to improve birth preparedness services. This can improve birth preparedness to reduce maternal and newborn morbidities and mortalities.

## 1.7 DEFINITION OF TERMS

### 1.7.1 Definition of key concepts

**Antenatal care:** It is the care provided to pregnant women and adolescent girls by skilled healthcare professionals to ensure the best health conditions of both the mother and the baby during pregnancy. It includes recording the medical history, assessing individual needs, providing advice and guidance on the pregnancy and delivery, performing screening tests, providing education on self-care during pregnancy, identifying conditions detrimental to the health during pregnancy, and first-line management and referral, if necessary (WHO 2016:2).

**Birth preparedness and complication readiness practice:** It is a strategy to promote the timely use of professional care for mothers and newborns. Knowing the signs of danger, choosing a place and a provider of birth, obtaining basic safe birth supplies and identifying a woman's companion are important. This includes transportation, money, a blood donor, and temporary family care in cases of emergency (JHPIEGO 2004:71).

**Direct maternal death:** These are deaths caused by obstetric complications during (pregnancy, labour, puerperal), interventions, omissions, wrong treatment, or events in a chain resulting from any of the above events. It can also be death by

haemorrhage, infections, preeclampsia and eclampsia, complications of abortion and obstructed labour (WHO 2013:66).

**Indirect maternal death:** Deaths due to existing or previous diseases that have developed during pregnancy and are not caused by direct obstetric causes but are exacerbated by physiological effects of pregnancy. The causes of indirect maternal mortality include hepatitis, anaemia, malaria, cardiovascular disease, HIV/AIDS, diabetes, tuberculosis and mental illness (WHO 2013:66).

**Emergency obstetric care:** This care includes a series of medical interventions or functions to manage life-threatening obstetric complications [CDC] 2014:36).

**Essential obstetric care:** This includes minimal medical interventions needed to manage or prevent pregnancy and birth complications (Médecins Sans Frontières 2019:7).

**Key risk factors during pregnancy:** Key risk factors include severe vaginal bleeding, blurred vision, swollen hands/feet, and severe vomiting (WHO 2013:97).

**Key risk factors during labour and childbirth:** Prolonged labour lasting more than 12 hours, severe vaginal bleeding, and convulsions (WHO 2013:128).

**Key risk factors during the post-partum period:** These are severe vaginal bleeding, foul-smelling discharge, high fever, and convulsions (WHO 2013:127).

**Maternal health:** According to the WHO, maternal health refers to the “health of women during pregnancy, childbirth and the postpartum period” (WHO 2017:1).

**Maternal death:** These includes the death of a woman while pregnant or within 42 days after the termination of the pregnancy, regardless of the duration and place of pregnancy, and any cases related or aggravated by pregnancy or its management, but not accidental or incidental causes (Ministry of Health India 2017:17).

**Maternal mortality rate:** The maternal mortality rate refers to the number of maternal deaths related to pregnancy, childbirth and postpartum complications per 1,000 live births in a specified period of time (WHO, UNICEF 2012:6).

**Maternal mortality ratio:** This refers to the number of women who die each year from pregnancy-related causes of 100,000 live births. The MMR is used to measure the quality of the health system (Ministry of Health India 2017:17).

**Pregnancy:** It is the development of one or more offspring inside a woman, which usually lasts about 40 weeks from the last menstrual period and ends with childbirth (Obrowski, Obrowski & Starski, 2016:1).

**Skilled birth attendants:** This refers exclusively to health professionals such as doctors, midwives and nurses who have been trained and who are capable of managing normal deliveries, diagnosing and referring obstetric complications. In addition, as part of an integrated team of professionals in maternal and newborn health (MNH) (including midwives, nurses, obstetricians, paediatricians and anaesthetists), perform all signal functions of emergency maternal and newborn care in order to optimise the health and well-being of women and newborns (WHO 2018:2).

**Strategy:** A strategy is the central rule of a framework, designed to unify all actions and decisions around removing the bottleneck to achieve the foremost aspirations (Mark Blackwell & Arkaro, 2022). According to this study, a strategy addresses the priority interventions in relation to the emergency context of birth preparedness that address the danger signs, emergency transportation and maternal health service accessibility during pregnancy, childbirth and the postpartum period.

### **1.7.2 Operational definitions and measurements used in this study**

**Birth preparedness and complication readiness:** A woman is regarded as being prepared for birth and its complications in this research study if she has made arrangements for at least three of the component practices of BPCR (identify the place of delivery, identify a skilled provider, save money, identify transport, and identify a blood donor ahead of an emergency occurrence). The women who did

not answer measurements are regarded as being unprepared for birth and its complications.

**Awareness of key danger signs of pregnancy:** In this study, a woman is considered to have an awareness of the key danger signs of pregnancy if she can mention at least two of the three key danger signs of pregnancy spontaneously (i.e., vaginal bleeding, swollen hands or faces, and blurred vision).

**Awareness of the key danger signs of labour/childbirth:** A woman is considered to have an awareness of the key danger signs of labour or childbirth if she can name at least three of the four key danger signs of labour or childbirth spontaneously (i.e., vaginal bleeding, prolonged labour [ $>12$  hours], convulsions, and retained placenta).

**Awareness of key danger signs of postpartum:** A woman is considered to have an awareness of the key danger signs of postpartum if she can mention at least two of the three key danger signs of postpartum spontaneously (i.e., vaginal bleeding, foul-smelling vaginal discharge, and high fever).

**Skilled provider/skilled attendant:** People with midwifery skills (i.e., midwives, doctors, and nurses) who have been trained and are proficient in the skills necessary to manage normal births and diagnose, manage, or refer obstetric complications.

## **1.8 META-THEORETICAL ASSUMPTIONS**

Meta-theory can be defined as what exists outside or outside any substantive theory, empirical research or human practice. Therefore, meta-theory paves the way for a practical theory that is likely to be developed or supported, empirical research that is likely to be carried out based on a theory, framework, model, hypothesis, or practice that is likely to affect. Any research inevitably depends on a particular ontology (the world is), epistemology (the world can be known), methodology (the methods to be used in the world's investigation), and aetiology (the underlying causes of the world). All academics and researchers agree to these



assumptions to varying degrees, thus embracing a different meta-theory (Lor 2017:4).

According to Kaushik (2019:8), assumptions are statements taken for granted to be true, even though they have not been tested scientifically. This study is based on the following assumptions:

1. Maternal factors and a lack of awareness of predicting the danger signs of pregnancy can affect BPCR practice and the decision to seek care.
2. Service-related constraints, such as being unable to get skilled birth attendants, materials and drug supplies, play a role in not accessing appropriate health services on time.
3. Scarce infrastructure, such as transportation, money, and a lack of all-weather roads to identify and reach the appropriate health service to treat emergencies immediately.

## **1.9. RESEARCH PARADIGM**

According to Kivunja and Kuyini (2017:65), research paradigm is defined as the philosophical orientation of researchers and have a major impact on all decisions taken in the research process, including the choice of methodology and how to construct meaning from collected data. The pragmatic paradigm originated among philosophers who argued that it was impossible to access the truth of the real world only by a single scientific method, so the pragmatic paradigm advocates the use of mixed methods as a pragmatic way of understanding human behaviour (Long, Mc Dermott & Meadows 2018:16).

Research paradigm is classified into four parts according to the beliefs of researchers who adopt a qualitative, quantitative, or mixed method approach to research and choose the best paradigms between post-positivism, constructivism, transformation and pragmatism. The researcher chose the pragmatic approach in this study because it applies to mixed methods research. Individual researchers have the freedom to choose methods, techniques and procedures that best meet their needs and objectives, and can use both quantitative and qualitative data to provide the best understanding of research problems (Creswell 2014:40-41).

Since the researcher chose a mixed methods approach the qualitative and quantitative study findings, this chosen paradigm can help assess the key variables, including birth preparedness, complication readiness, and the associated danger signs and factors. The chosen theoretical models guided the literature review, the development of the data collection instruments, the presentation of the research findings, the discussion of the research results, and development strategies. The theoretical framework is discussed in detail in Chapter 3.

A research paradigm is a theoretical framework for organising research that comprises several fundamental presumptions, significant challenges, different research models, and techniques for addressing particular research questions (Arif, Habbe & Rasyid 2023:11). Furthermore, a paradigm is a fundamental set of views that scientists have in common, and comprises a set of agreements about how issues should be understood, how we see the world, and consequently, how we approach undertaking research (Rahi 2017:6).

#### **1.9.1.1 Ontology**

Ontology helps researchers to recognise how certain they can be about the nature and existence of the objects they are researching. For instance, which truth claims can researchers make about reality, who decides the legitimacy of what is real, and how the researcher can manage the different conflicting ideas about reality (Moon & Blackman 2014:28). Ontological assumptions help this study conceptualised the study findings to address the research problems and make significant contributions to the study's objective.

#### **1.9.1.2 Epistemology**

Epistemology focuses on the nature of human knowledge and the potential intellectual capacity that a researcher may possess to deepen, expand, and share an understanding of the topic of study (Kivunja & Kuyini 2017:6). The researcher can determine what is already known and what is new in this study's findings by reviewing literature studies on prior research findings connected to this topic. Based on the epistemological assumptions, this research used previous research

findings ranging from the global arena to Africa, sub-Saharan Africa, Ethiopia, and the Oromia region.

### **1.9.1.3 Methodology**

Methodology refers to the well-planned investigational techniques, methods, approaches, and processes used to gather information for the research. It consists of tools, study participants, data gathering methods, and data analysis strategies (Kuyini 2017:6). This study used different methodologies step-by-step, starting with the study design, research tool preparation, data collection, and analysis of the research findings. The researcher reviewed the methodology paradigms to apply appropriate methodologies to this research.

## **1.10 THEORETICAL FRAMEWORK**

As Simion (2016:68) mentioned, theory can be used in both quantitative and qualitative research to guide data collection and interpretation and propose an explanation following the researcher's observations and findings. It provides a complex and comprehensive conceptual understanding of how societies work, how organisations operate, and why people interact in certain ways. In many cases, a theoretical framework is formulated to explain, predict, and understand phenomena to challenge and extend the existing knowledge. In this study, the researcher looks at different aspects of the data theory that provide a framework within which to conduct the analysis

### **1.10.1 Health models**

This study is based on two health models used as a framework. The two models used in this study are the Health Belief Model (HBM) and the Three Delays Model described below:

#### **1.10.2 The Health Belief Model**

The HBM is the oldest and most widely used model specifically developed to explain why people do not use healthcare services. The model has been applied to many aspects of health behaviour, as the name implies, and almost exclusively

to the cognitive influences (beliefs) of health behaviour. The HBM was originally developed by Rosen Stock in 1966 to explain preventive health behaviour check-ups or screening. Backer further developed it in 1974 and then applied it to several areas of health psychology, including sick role behaviour, adherence to medical regimens and health promotion behaviour (Jones, Jensen, Scherr, Brown, Chirsty & Weaver 2015:30). This model could apply to a range of health behaviours. Furthermore, it provides a framework for shaping behaviour patterns concerning public health and training healthcare professionals to work with their patients' subjective perceptions of illness and treatment (Charles & Paschal, 2015:2).

The framework further breaks health decisions into a series of stages and offers a catalogue of variables that influence health actions; it does not provide a model of exactly how these operate. According to the HBM, the likelihood that a person will adopt preventive behaviour will be affected by her subjective weighing of the costs and benefits of the action. This perception involves four elements which are:

#### **Perceived susceptibility to the disease**

It is a belief about the chances of experiencing a risk or developing a condition or disease. Its application is influenced by personalising risks based on a person's characteristics or behaviour, the perceived severity: belief about how serious a condition is. Its sequelae are the specific consequences of the risks and the phenomena, the perceived benefit: belief in the efficacy of the advised action to reduce the risks or the seriousness of the impact. In addition, it defines how, where, and when to act and clarifies the expected positive effects.

#### **Perceived severity of the condition**

The perceived severity of the condition relates to its clinical consequences, disability, pain or death.

#### **Perceived benefits of an action**

This refers to the effectiveness of the proposed action in reducing the health risks and whether the course of action has other benefits.

### **Perceived barriers**

It is the belief in the tangible and psychological costs of recommended action. It also identifies and reduces perceived barriers through assurance, correction of misinformation, incentives and assistance (Ghorbani-Dehbalaei, Loripoor & Nasirzadeh 2021:21).

### **Stimulus or cue to action**

When the customer feels that a beneficial action has been taken, a real change occurs, such as an external or internal indication. The scope of the signals needed to trigger the action will depend on the motivation to change and the perceived value of the cost ratio of the action.

According to the study conducted on pregnant women based on the HBM, pregnant women's perceived susceptibility to obstetric complications was the feeling of risk experienced from complications arising during pregnancy and childbirth. At the same time, the perceived susceptibility was influenced by the maternal age, parity, limited comprehensive knowledge of the danger signs of pregnancy, the limited awareness of the danger signs of pregnancy and childbirth detected as perceived barriers to seeking care when experiencing the danger signs, and the perceived severity of obstetric complications, including maternal and newborn deaths (Sripad *et al* 2019:19).

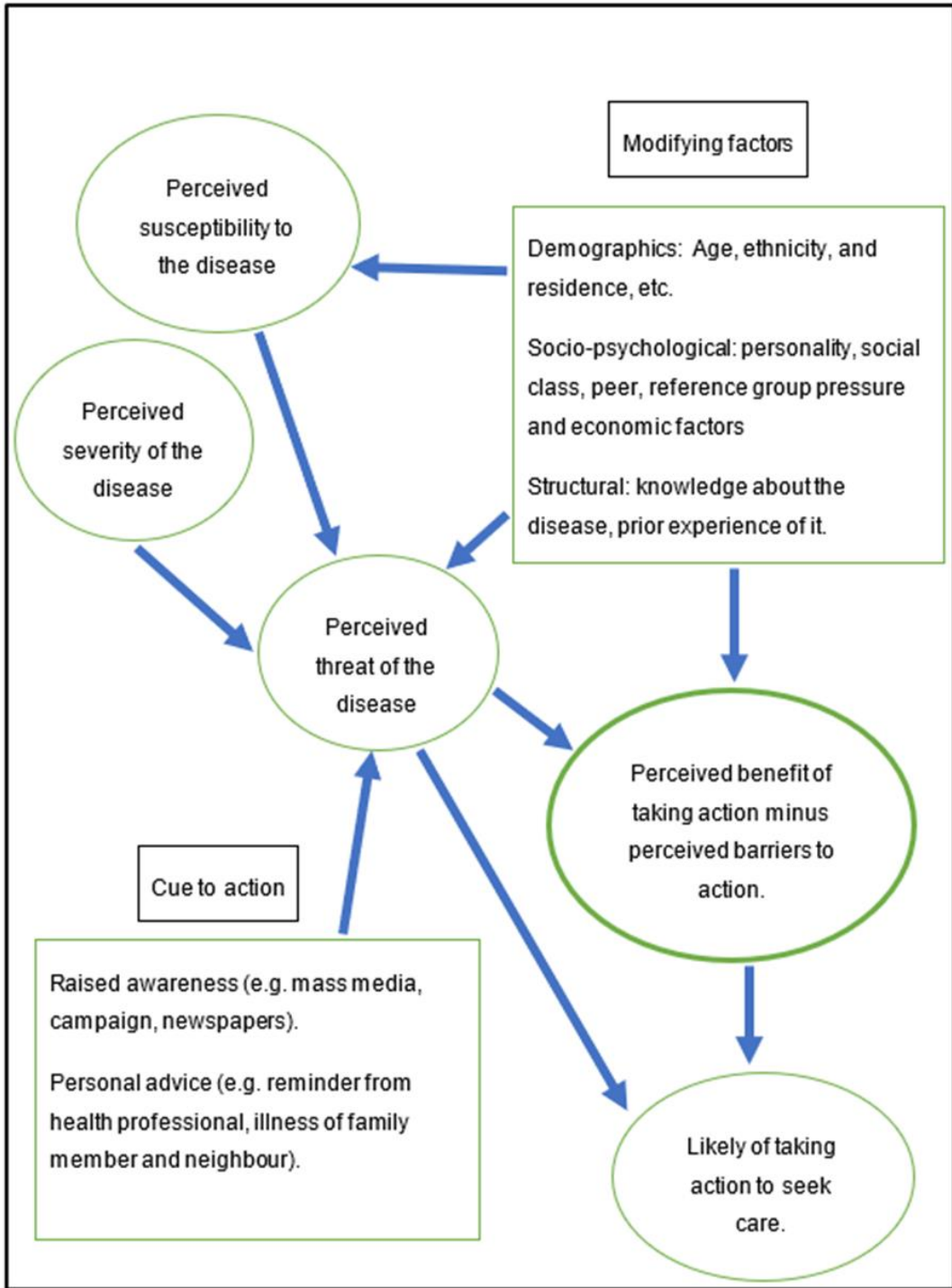
The study conducted in Nigeria on the correlation between risk perception and danger signs recognition revealed that, among 400 men and women, 64.3% detected maternal age. In contrast, 31.3% indicated parity, and 31.8% mentioned postpartum haemorrhage, and the overall risk perception of participants had a good perception score (58%) in detecting the contributing factors (Iliyasu *et al* 2019:85).

A study conducted in Ethiopia using the HBM on 357 pregnant women revealed that 80% of the participants attended ANC visits, but only 34% were informed about the danger signs of pregnancy and childbirth during ANC visits, 57% were counselled on the place to give birth, and only 19.3% gave birth to their index child in a health facility. Among the factors, an increase in the perceived susceptibility

and perceived severity scores that were found to increase and to utilise health facilities were 1.5. and 1.66, which were higher than their counterparts (Kahsay, Hiluf, Shamie, Tadesse & Bazzano 2019:16).

A study that assessed the perception of 614 pregnant women on the home delivery risk in Gonder, Ethiopia, reports that 55.5% of pregnant mothers gave birth at home, and only 28.5% gave birth at a health facility. The largest variance of intention to give birth at home was 46.2%, explained by the perceived seriousness of the condition, 32.2% by the perceived susceptibility, and 26.4% by the perceived barriers (Berhe & Nigussie 2019:8).

In relation to this research study, HBM concludes that the perceived susceptibility to developing obstetric complications and the perceived severity of the obstetrics complication set the mother up for cue action that would activate readiness and self-efficacy to promote the confidence of an individual to act accordingly. Pregnant women's health-seeking behaviours are based on the perceived benefits and costs, enabling or modifying factors that affect the access to and utilisation of services/facilities and influencing their decisions to seek the services (see Figure 1.1).



**Figure 1.1: Predicting and changing health behaviour based on Health Belief Model**

Source: Adapted from Rosenstock (1974:2)

### 1.10.3 The Three Delays Model

Thaddeus and Maine (1994:38) identified the Three Delays Model in 1994. The model is based on the premise that maternal health complications are usually unpredictable and occur at home when women refuse to use evidence-based maternity services and that maternal obstetric problems can be prevented through tertiary prevention. According to Maine, Akalin, Ward and Kamara (1997:13), emergency obstetric care (EMOC) services are necessary to reduce maternal mortality and morbidity, even when the services are functioning well. Mothers with obstetric complications during pregnancy and childbirth can experience various barriers to using health services, such as a lack of money to pay for transportation or services, a culture that places a low value on women's lives, long geographic distances and poor roads, and anything that causes a delay in getting treatment or may endanger women's lives. The Three Delays Model serves as a basis for developing many indicators that help address the barriers to EMOC practices. The model is classified into three phases.

**The first delay:** The lack of decision to seek care, mostly, the inability of the pregnant mother to decide to seek high-quality care. Several factors can cause the first delay, such as economic status, educational factors, women's status, and socio-cultural factors.

**The second delay:** Related to accessibility of the health facility or identifying and reaching the appropriate health service, the most common reasons for the second delay are the distance of the health facility from the home, a lack of transportation, the cost of transportation, and the travel time.

**The third delay:** After reaching the health facility, the inability to receive adequate, appropriate, and quality care are among the causes, together with a lack of trained healthcare workers, a lack of medical equipment, and poor medical management. It is important to note that many women die in hospitals, even though they have overcome some barriers to care. The provision of EMOC depends on several factors, including the number and training of the staff, the availability of drugs and supplies, and the general condition of the facility. In addition, there is a crucial element concerning



management. A facility can have all the required staff and supplies yet provide poor care. This is important to consider in evaluating their performance. For example, a checklist of supplies and equipment does not tell you if care is being provided or how long it takes.

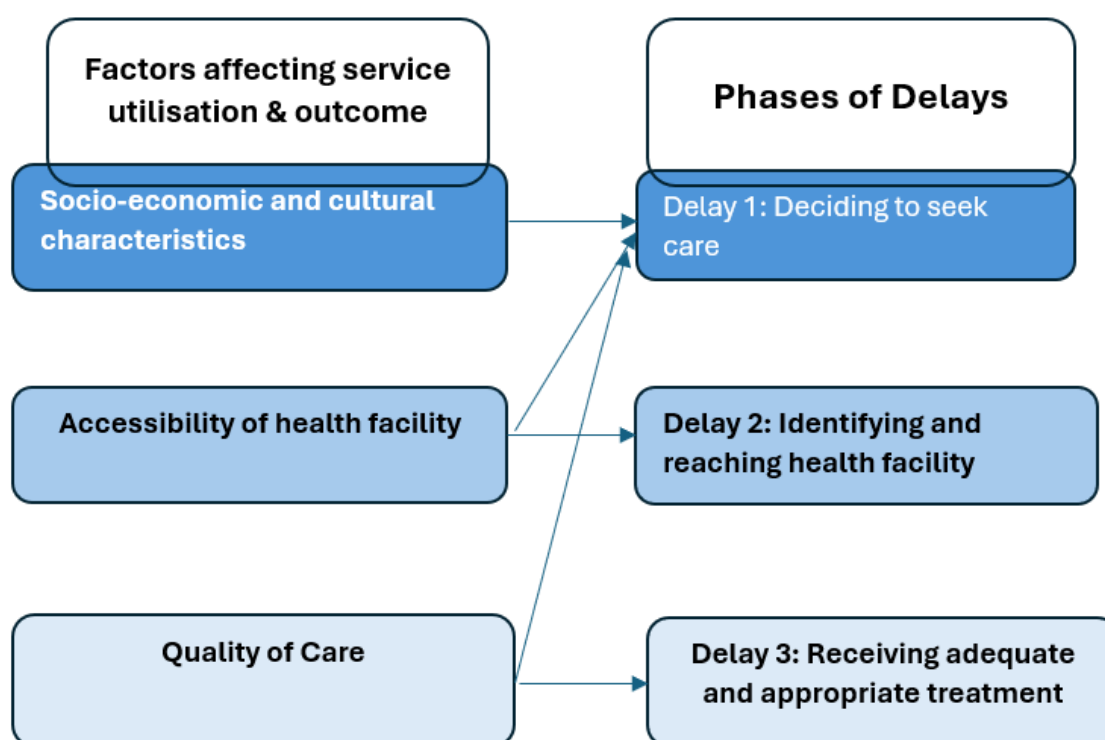
A study conducted in Malawi used the Three Delays Model to identify the factors influencing maternal mortality because of not applying birth preparedness and complication readiness practices. Among 151 deaths, 94 mothers died in the health facility. Of the 57 women who died at home, 39.3% experienced barriers regarding the first delay, 14.9% were counselled by traditional birth attendants without attending a health facility, and 13.8% delayed seeking professional care because they did not want to stay in the labour ward. The reason for the second delay was the inaccessibility of a health facility around the catchment area, which led to women travelling long distances, which was the cause of death of 52% of the mothers, 39.4% delayed seeking care due to the unaffordable cost of transportation. The time taken for women to obtain sufficient money for transportation and services was two hours when the decision to seek care was made. The reasons for the third delay were the long waiting hours before getting treatment at healthcare facilities, which accounts for 94.7% of the cause of death of mothers. The danger signs the women presented during an emergency were haemorrhage, headache, vomiting, and pallor (Mgawadere, Unkels, Kazembe & Van den Broek 2017:17).

A qualitative study in Ethiopia, Afar, and Kefa Region using the Three Delays Model to identify the factors influencing the decision-making power of women and barriers that hamper birth preparedness and complication readiness practice revealed that in the Afar region of Ethiopia, the power of the women to decide to utilise obstetric emergency and other maternal healthcare services was determined by the husband. Most husbands did not want male healthcare workers to examine their wives. Instead of visiting the health facility during emergency obstetric problems, they consulted traditional birth attendants, which exacerbated the situation by causing a further delay since the EMOC hospital was 250

kilometres from the rural areas, and the husbands were reluctant to pay the costs of transportation and medical treatment.

Other reasons for the second delay were the inaccessibility of transportation, the lack of a mobile network to call for an ambulance, and the poor road infrastructure. Related to the third delay, after a woman reaches the health facility, some doctors neglect the patients and delay treating them upon arrival, which contributes to high maternal deaths in the study area (Jackson, Tesfaye, Gebrehiwot & Godefay 2017:22).

In this research study, using the first delay variables helped pregnant women to recognise a problem and decide to seek care. The second delay provides information on physical accessibility, transportation, and appropriate level of care. The third delay provides information that will assist health professionals in rendering adequate and appropriate care to women (Figure 1.2 below).



**Figure 1.2: The Three Delays Model in Emergency**

Source: Adapted from Maine *et al.*, (1997)

#### **1.10.4 Justification for using the chosen theoretical frameworks**

These theoretical models were chosen because they fit this study's area of interest. The HBM and the Three Delays Model deal with enabling factors to seek health services, detect barriers that hamper the clients, and identify the clients' perception towards BPCR practice as explained based on the constructs of the models. Both models helped the researcher to answer the research questions.

The models that guide the researcher to focus on the study also assist with formulating the research question, engaging in the literature review, developing the data collection tools when analysing the results, discussing the findings, and making conclusions and recommendations based on the study findings.

## 1.11 RESEARCH METHODOLOGY AND DESIGN

### 1.11.1 Research design

The research design aims to give a study a suitable structure. The decision to be made about the research approach is one of the most important decisions in the research design process since it determines how pertinent data will be gathered for a study; however, there are numerous other interconnected decisions in the research design process (Sileyew 2019:14).

A mixed method study design enhances health science research by enabling the researcher to address complicated real-world research questions typical of the field. Researchers can also benefit from the advantages of combining quantitative and qualitative data in a single study (Florini, Griffiths & Houdmont 2016:10).

This study used a sequential explanatory mixed method study design to use in these findings to answer the research questions formulated by the researcher. According to Creswell and Creswell (2018:357), the explanatory sequential mixed approach is a design in mixed methods that appeals to individuals with a strong qualitative background or from fields relatively new to the qualitative approaches. This research has two phases that emphasised gathering evidence in preparation and developing strategies for birth preparedness.

**Phase 1 Quantitative approach:** In this first phase, the researcher collected quantitative data, arranges, cleans, analyses, and interprets the data to build with qualitative results.

**Phase 2 Qualitative approach:** In the second phase, purposefully selected pregnant women participants were interviewed in the FGD, and health professional for in-depth interview, and the collected data were analysed to follow up with quantitative findings to help explain confusing, contradictory, or unusual survey responses in this study.

### **1.11.2 Research methodology**

A research methodology is a science that describes how research is carried out methodically in a particular field of study (Mishra & Alok 2017:17). It involves an assumption about the nature of reality and knowledge, or it is a theory and analysis of how research should proceed. In contrast, a research design can be divided broadly into qualitative and quantitative approaches. Qualitative and quantitative research raises several fundamental epistemological issues and challenges the vision of what science is. Qualitative research is characterised by adherence to diverse orientations and strategies for maximising the validity and trustworthiness of the study procedures and results. In contrast, quantitative research is the systematic and scientific investigation of quantitative properties and phenomena and their relationships (Zegeye, Worku, Tefera, Getu & Sileshi 2009:36).

#### **1.11.2.1 Setting**

Ethiopia is situated in the Horn of Africa and covers about 1.1 million square kilometres. It is the second-most populous country in Africa, with a total population of 108,113,150 million in 2019, of which more than 80% live in rural areas (CIA, World Fact Book, 2019). Administratively, Ethiopia is divided into nine regional states. The health delivery system in Ethiopia comprises a three-tier system. The first type at the district level is the primary health care unit (PHCU), with a package of one primary hospital that can serve a population of 60 000-100 000, four health centres each serving 15 000-25 000 people, and five satellite health posts serving 3000-5000 people. The second tier is a general hospital serving a population of 1 to 1.5 million, and the third tier contains a specialised teaching hospital for a population of 3.5-5 million (Federal Ministry of Health, Sector Development Plan 2015).

According to the study measuring progress towards universal health coverage in Ethiopia, the overall universal health coverage for 2015 was 34.3%. Among these, the national reproductive, maternal, neonatal and child health progress was 37.5% (Ergeta, Hailu, Memirie & Northen 2019:10).

The study area of Arsi Zone is found in the central part of the Oromia Regional State, South-East Ethiopia. The Zone lies between 60 45' N to 80 32 E to 40 50' E, with an altitude of 2247.25 meters above sea level and is located 175 kilometres East of Addis Ababa, the capital city of Ethiopia. The Zone shares boundaries with East Shewa, West Harerge, and the West Arsi Zone. For administrative purposes, the Zone is divided into 25 districts and two administrative towns, with an area of 23679 kilometres. Based on the 2007 population and housing census projected for 2020, the total population of the Arsi Zone is estimated to be 3,673,474 million. Among this number, 1,800,002 are males and 1,873,472 are females. It is estimated that there are 812,940 women of childbearing age and pregnant women, numbered 127,470, of which 90% of the population were estimated to be rural residents. According to the current health system of the federal government, the number of health institutions in the Arsi Zone are one referral hospital, seven primary hospitals, 108 health centres, and 498 health posts, which is the smallest health unit serving 5000 populations at the grass root level (Arsi Zone Health Office, 2020). The study was conducted among two randomly selected hospitals and three health centres using the lottery method.

The Zone is divided into five Agroclimatic zones due to variations in the altitude. It is dominantly characterised by a moderately cool annual temperature of about 40%, followed by a cool annual temperature of about 34% (National Regional Government of Oromia, 2011).

This research study includes five health institutions, two hospitals, and three health centres. The selected health institutions are the followings:

- a. The Assela Teaching and Referral Hospital, the only referral hospital in the Zone, is estimated to serve a population of 3.5 million, with an estimated 8,016 pregnant women currently in the catchment areas.
- b. The Kersa District Hospital serves a total population of 232,184, with an estimated 8,057 pregnant women.
- c. The Eteya Health Centre serves a population of 175,143, with an estimated 6,077 pregnant women.

- d. The Huruta Health Centre currently serves a population of 150,870, with an estimated 5,235 pregnant women.
- e. The Ogolcho Health Centre serves a population of 145,471, with an estimated 5,048 pregnant women.

**Table 1.1: The research study area of health institutions serving the population and the number of pregnant women in the catchment area (2022)**

S.No	Name of the health institution	Serving population	Number of pregnant women in the catchment area
1	Assela Referral and Teaching Hospital	3,500,000	8016
2	Kersaa District Hospital	232,184	8057
3	Eteya Health Centre	175,143	6077
4	Huruta Health Centre	150,870	5235
5	Ogolcho Health Centre	145,471	5048

### **1.11.2.2 Description of the health institutions in the study area**

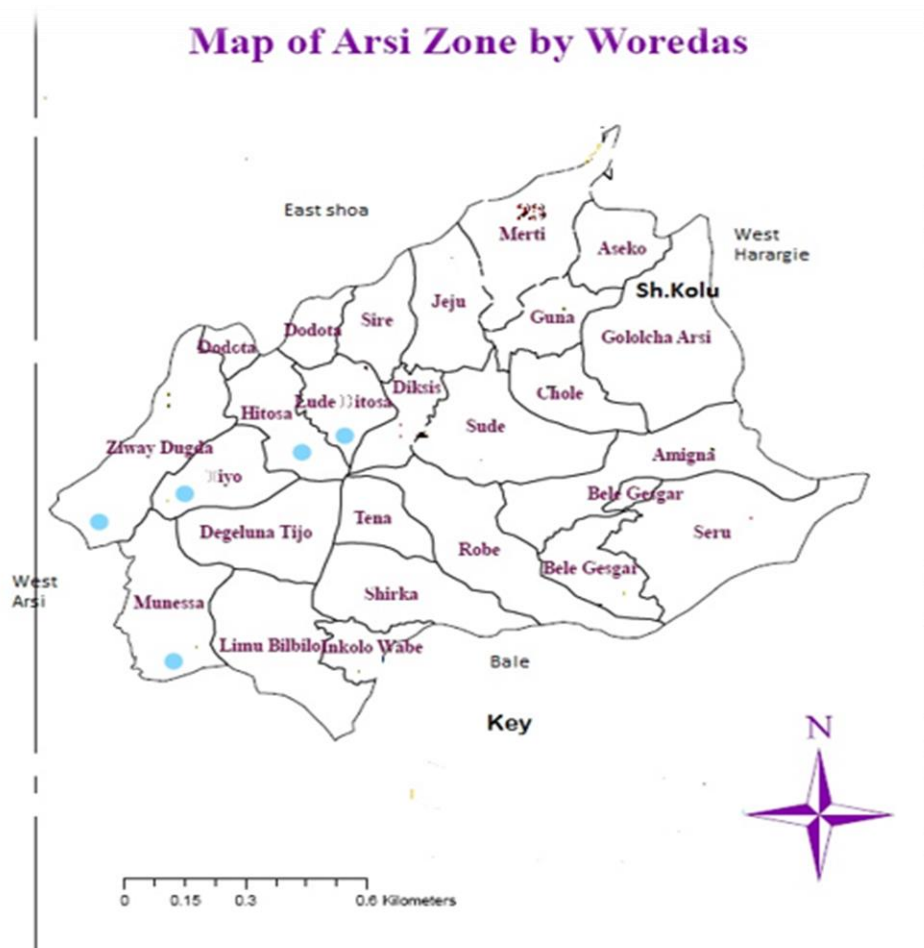
The health institutions are providing maternal, child, adolescent, and adult health services. Staffed by different health professionals, such as midwives, nurses, health officers, and medical doctors who can handle emergencies during ANC, delivery, and postnatal periods, serving 24 hours a day, including weekends (Arsi Zone Health Office 2020).

Some services offered in these health centres and hospitals include:

1. ANC service every day
2. Managing normal delivery at the health centre
3. Managing normal delivery and S/C for complicated labour at the hospital
4. Administering parenteral anti-convalescent to pregnancy-induced hypertension both in the health centre and hospital

5. Manual removal of retained placenta
6. Blood transfusion for haemorrhage at hospital level
7. Treating infection during pregnancy, delivery and postnatal periods
8. Administering parenteral oxytocic drugs
9. Referral system for complicated maternal conditions

The following map indicates the location of the study area marked by colour.



**Figure 1.3: Map of the Arsi Zone by district**

Source: Arsi Zone Health Office (2020)



### ***1.11.2.3 Population and sampling***

In this research study, systematic random sampling techniques were used for the quantitative part and the purposive sampling method for the qualitative part. Pregnant mothers who attended ANC visits at eligible health institutions were selected for the quantitative study. Pregnant women who did not participate in the quantitative study were sampled to participate in the FGDs, and the key informant health professionals working in a health facility were sampled for in-depth interviews. Chapter 3 provides detailed information on the target population and the sampling of participants for the research study.

### ***1.11.2.4 Data collection procedures***

#### **Quantitative**

Structured and semi-structured interviewer-administered questionnaires were prepared to assess the quantitative part of the study. The questionnaire was formulated in English language through examining the relevant literature and questionnaire guides (Johns Hopkins School of Public Health 2004).

The questions were initially translated into Amharic and Oromefa to accommodate participants who speak the local languages. Both local languages were translated back into English by a language expert using a back-to-back translation approach to maintain consistency and accuracy. The questions were pre-tested on 51 (5%) of the participants in a health institution with a setup similar to that of the selected health institution. Then, the necessary corrections such as maternal health service utilization, and maternal obstetric history were made based on the pretested results. More information on quantitative data collection is indicated in Chapter 3.

#### **Qualitative**

The question interview guide was prepared based on strategies to improve birth preparedness among pregnant women. The question interview guide used a probing procedure to help explain the questions and enable the interviewer to keep track of the sequence of the questions. Flexible structure interview guide questions

were used to allow the interviewer to assess all the areas relevant to the interviews and to obtain a deeper participant perspective on the strategies to improve birth preparedness. A pre-test was conducted before the actual FGD and in-depth interview to check the FGD and in-depth interview guiding question. The researcher used an interview guide question to collect the data; audio recording and note-taking were also done.

### **Focus group discussions**

Three FGD sessions with pregnant mothers, one from the hospital and two from the health centre, were undertaken by the principal investigator, and notes were taken to explore the cultural and social experiences of the pregnant women regarding BPCR, their reasons, perceptions, and strategies to improve the services.

### **In-depth interviews**

The in-depth interview guide was prepared to enable the interviewer to keep track of the interview sequence and to get a concrete idea of the participants' attitudes towards the interview targets. A pre-test was done before the interview to test and correct the prepared guide questions for accuracy.

Nine in-depth interviews were conducted with health professionals providing ANC service, an MCH co-ordinator, and health centre directors working in the two health centres and one hospital. After explaining the purpose of the study and obtaining informed consent, an in-depth interview was conducted by the principal investigator and the note taker; the note taker took written notes, and the voice recording was done using a tape recorder.

#### ***1.11.2.5 Data analysis***

### **Quantitative**

After data collection, the supervisor checked every questionnaire collected daily for completeness and consistency. The quantitative data were entered into Epi info version 3.5.4 and transferred to SPSS version 26 for further cleaning and analysis of the results. The association between dependent and independent variables was assessed using logistic regression. Variables with a P value  $\leq 0.2$  in the bivariate analysis were entered into a multiple logistic regression model to control confounding. An odds ratio with a 95% confidence interval was used to show associations. A P value of  $< 0.05$  was considered statistically significant in the multivariate analysis. The detailed process of data analysis is presented in Chapter 3.

### **Qualitative**

An inductive thematic analysis approach was used to analyse the data, including coding, categorising, summarising, and analysing the data. The qualitative data analysis software ATLAS.ti version 8 was used for further analysis of the data.

## **1.12 ETHICAL CONSIDERATIONS**

An ethical clearance letter with reference number Rec-240816-052 was obtained from the University of South Africa (UNISA) Department of Health Studies' Higher Degrees Committee and Oromia Health Bureau with reference number BEFO/HBTFH/1-16/10399 to conduct the current study (Appendix 1). The UNISA Akaki Regional Learning Centre wrote a letter to request permission to the Oromia Health Bureau to conduct the study. The Arsi Zone Health Bureau wrote a support letter to the selected district health offices. Finally, the selected district health offices wrote permission letters to the selected health facilities to allow the researcher to conduct the study. Ethical considerations are discussed in detail in Chapter 3.

## **1.13 STRUCTURE OF THE DISSERTATION**

This thesis consists of eight chapters. The following section outlines the content of each chapter.

**Table 1.2: The structure of the research thesis**

<b>Chapters</b>	<b>Title</b>
Chapter 1	Orientation of the study
Chapter 2	Literature review
Chapter 3	Research design and method
Chapter 4	Analysis, presentation, integration of research results and theoretical framework, and description of the research findings
Chapter 5	Result and discussion of FGD and in-depth interviews
Chapter 6	Integration of quantitative and qualitative findings, and discussions
Chapter 7	Strategies' guidelines to improve birth preparedness
Chapter 8	Conclusion and recommendations

#### **1.14 CONCLUSION**

In Chapter 1, an overview of the research study is presented and discussed. It contains the background of the research problem, the significance of the study, the statement of the research problem, the purpose of the research, the research objectives, and the research questions. In addition, the research designs, research methods, data collection methods, data analysis, study setting, and ethical considerations were discussed in this chapter. Chapter 2 reviews the literature pertaining to this study's topic.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 INTRODUCTION**

Literature review is an essential component of the research process in each field of research and a key element of the final research report for researchers. It helps to clarify the scope of the research project by creating a story of what is and is not known in this field and where there are disputes (Avni, Burly & Casey, 2015:27). The literature review search is a brief description of current research and publications on specific topics. It also helps to record previous and current works so that new work can be built on them rather than duplicated. (Skills for Learning, 2018). The review of the literature provides a context for methodological analysis, promotes innovation, avoids duplicate research, and ensures the achievement of professional standards (Maggio, Sewell & Artino, 2016:297).

This research study planned to follow certain steps in the literature review to identify the appropriate databases to search the literature. Various steps were taken to identify the literature based on the data, select the related articles, and organise the articles for citations. Searching the literature in one or more databases using the Population Intervention Comparison Outcome Time (PICO) guide was used in order to be more efficient in the process. Google Scholar, the Web of Science, the Scopus database, and open access articles constituting 28% of the literature were among the databases used to search the literature for this study (Pearce 2018:23).

#### **Steps in literature search**

According to university of BATH (2020:2-6), steps in literature search are as follows:

1. Define my research question
2. Choose a data base to conduct my search
3. Design search strategy / key words according to the resource being used

4. Conduct search
5. Refine search strategy and repeat as necessary
6. Keep a resource of search

The theoretical bases of health models were reviewed in the existing literature to conceptualise this study. This literature review addresses the level of birth preparedness and influencing factors. Recent and relevant international, national, and local literature were reviewed, emphasising developing countries.

## **2.2 MATERNAL HEALTHCARE SYSTEM IN ETHIOPIA**

During the 1997-1998 fiscal year, the Federal Ministry of Ethiopia (FMOH) launched the National Health Sector Development Programme (HSDP). This programme has moved the focus of the health system from a predominantly curative to a more preventive and promotional care. It prioritised the needs of rural residents, who account for 83% of Ethiopia's population (USAID 2017:40). Ethiopia has made progress in maternal health services by improving its health systems. According to the Ministry of Health in Ethiopia, the essential health service package launched in 2019 aims to provide health system access to high-quality health services for maternal care without any payments regardless of age, ability to pay, and geographical location, even if it faces a considerable challenge with regard to achieving a great deal to solve the maternal emergency health conditions (FMOH 2019:16).

In the three tiers health system of Ethiopia, one of the health systems at a grass root level is the health extension programme, which is an innovative health service delivery system that aims to facilitate access to basic preventive and curative services in the rural, urban and pastoralists areas that enable the avoidance of maternal delays to receive early treatment and care for emergencies (MOHE, World Bank & WHO 2015:2).

After establishing the Health Extension Programme (HEP) in 2010, a new approach, the Women's Development Army (WDA), was linked with the HEP. It

involves the women in one-to-five connection with six households in the same neighbourhood to form a women's development team (WDT) to address practical health information based on sixteen health extension package programmes (Yitbarek, Abraham & Morankar 2019:9).

### **2.3 ANTENATAL CARE SERVICE IN ETHIOPIA AND ARSI ZONE**

According to EDHS (2016:133), maternal healthcare services during pregnancy and after delivery are vital for the survival and well-being of both the mother and the infant. This EDHS survey indicated that the percentage of pregnant women aged 15 to 49 who utilise ANC services provided by skilled attendants in Ethiopia increased from 27% in 2000 to 34% in 2011 and 62% in 2016. At the same time, 32% of pregnant women made four visits to ANC during their last pregnancy.

The study conducted in the East Wollega Zone, Ethiopia, among 421 pregnant women, showed that the majority of the respondents (81.5%) had attended the ANC service recently; a higher late booking rate of 83.2% was registered among urban resident pregnant women (Ejeta, Dabsu, Zewdie & Merdassa 2017:27). A study on the utilisation of skilled ANC among 748 pregnant women who gave birth in one year before the survey was conducted and 665 (88.9%) had ANC at least once for the last birth, and 436 (65.6%) had four and more ANC services (Girmaye & Berhan 2016:26).

The study's findings on maternal health services utilisation among 748 women of reproductive age showed that 69.1% of participants utilised ANC services, and four of the 10 participants had four or more ANC visits. The most common reason for attending an ANC service was to solve their health problems (Shudura, Yoseph & Tamiso 2020:10).

The ANC service provided in the study area is based on the ANC guidelines prepared by the Ministry of Health in Ethiopia. ANC provides a platform for important healthcare functions, including health promotion, disease prevention, screening, diagnosis, and management of problems by implementing timely and appropriate evidence-based practices. ANC also improves maternal and perinatal

outcomes by providing favourable situations to communicate with and support pregnant women and their families (National ANC Guide 2022:1).

The components of ANC services in this study area considered the recommendation of the WHO (2016): a minimum of eight contacts for all pregnant women without specific pregnancy-related complications at all levels of care. During the first contact with the ANC, history and physical examination; vital signs; acute malnutrition screening; and basic and case-specific screenings, such as haemoglobin, blood groups, urine analysis, tests for HIV, HBV, syphilis, and ultrasound, are given before 24 weeks. It is not easy to get all the services mentioned above at the health centre; most services are available at the hospital level. The health professionals, ANC providers, and skilled birth attendants in the study area include gynaecologists, medical doctors at the hospital level, and midwives, nurses, and health officers at the health centre level.

A study conducted in Arsi Zone, Asella Town, among 209 lactating women who utilised postnatal services found that 180 (86.1%) had one visit to the ANC, but only 70 (39.2%) and 10 (5.5%) had three, four, and more ANC service visits, respectively (Tumbure *et al* 2018:6).

## **2.4 THE WHO STRATEGIES ON BIRTH PREPAREDNESS AND COMPLICATION READINESS**

Birth preparedness and complication readiness is an intervention included by WHO as an essential element of the ANC package. This strategic programme often addresses efforts to increase awareness of BPCR among pregnant women, their families, and the community as part of the ANC service (WHO 2015:310).

WHO recommended eight contacts concerning focused ANC with good clinical and counselling services through checking for complications and emergencies during pregnancy, labour, and delivery, including birth preparedness, as a vital package of focused ANC (WHO 2018:3).

One of the strategies of WHO, as a coverage target for 2025 to end preventable maternal mortality, is to increase the coverage of four ANC contacts as a global



target of 90% coverage, a national target of greater than 70% for 90% of countries, and a subnational target of greater than 70% coverage of ANC contacts for 80% of the district through the provision of awareness creation, birth preparedness, and quality ANC services (WHO 2021:4).

## **2.5 LEVEL OF BIRTH PREPAREDNESS AND COMPLICATION READINESS PRACTICE**

Assessing the level of birth preparedness and complication readiness practice of pregnant women helps to create a strategy to promote the timely use of trained health professionals during childbirth, booking at ANC centres at an early stage of pregnancy, saving money for unexpected obstetric complications, and identifying the means of transportation. Increasing the awareness of pregnant women to detect the life-threatening obstetric danger signs at the time of pregnancy, childbirth, and postpartum periods (Agba 2022:14).

### **2.5.1 Level of birth preparedness and complication readiness practice**

#### **Global level**

The birth preparedness and complication readiness practice (BPCR) strategy enables pregnant women, their families, and communities to plan for births and overcome emergencies (JHPIEGO 2004:1-5). The WHO revealed that women die because of complications during pregnancy, childbirth, and postpartum. The major complications concerning 80% of maternal deaths are due to severe bleeding, infection, usually after childbirth, and high blood pressure. The lifetime risk of death is high among women in developing countries. There is a probability that 1 in 37 fifteen-year-old women will die in sub-Saharan Africa, versus 1 in 6500 in Europe and 1 in 7800 in Australia and New Zealand (WHO 2019:19).

According to a study conducted in Thailand among 672 pregnant women attending ANC, 144 (21.4%) were not familiar with birth preparedness and complication readiness, 47% only mentioned the danger signs during labour, 70.4% planned to make four ANC visits with a skilled provider, 86.8% planned to give birth by a skilled provider, 50.7% planned to save money for childbirth, and 85.4% intended to

identify a mode of transport to the place of delivery (Kiataphiwasu & Kaewkiattikun 2018:797-804).

A study conducted in a rural health institution in India found that of the 274 participants, 81.4% knew only one danger sign during pregnancy and childbirth, fewer than 30% mentioned two danger signs, 77.4% were saving money to use during labour, and 68.2% were familiar with the transportation facility (Chajhlana, Prathyusha, Bhumi, Mahabhashyam & Varasada 2018:5).

A study in Nepal on 701 pregnant women's status of birth preparedness revealed that 80% had heard of birth preparedness; among those who had heard of birth preparedness, 90% saved money, and 64.8% identified transportation facilities. (Karkee, Lee & Binns 2013:29).

Furthermore, a study conducted in Bangladesh found that among 725 participants, 80% had a mobile phone. Concerning birth preparedness components, 80% identified the place of birth or a birth attendant, less than 42% saved money for an emergency, 20% arranged transportation for birth, and only 14.5% identified potential blood donors (Islam *et al* 2018:13).

According to a study in a hard-to-reach rural area in Bangladesh, 2807 women who recently gave birth indicated that the level of birth preparedness of the participants was 8.1%, which is extremely low. Only 12.4% of the women identified skilled birth attendants, 46.9% saved money to use while giving birth, and 20.8% arranged for emergency transportation (Moinuddin *et al* 2017:12). In addition, a facility-based cross-sectional study on two rural primary health centres in Dakshina District in India found that among 217 mothers, 10% of the participants were primary decision-makers to seek maternal health services, 85.9 % were accompanied by their husbands, mothers, and mother-in-law for ANC visits, 72% identified the means of transportation during labour time, and 62% were well informed about birth preparedness and complication readiness practices (Madhukaswar & Shivalli 2017:12).

The research study on reducing the burden of the three delays in Timer-Leste found that 60% of the study participants heard about birth preparedness, 63%

saved money, 15% identified skilled attendants during the birth time, 21% decided alone to seek care, 62% made decisions as a husband and wife, and the source of information for birth preparedness and complication readiness was 80% from government health institutions (USAID 2015:24-26).

A study undertaken in Nigeria's primary health centres in the Edo State revealed that, out of 230 total participants, 87.4% identified skilled birth attendants, 49.6% mentioned that the most dangerous sign during pregnancy was bleeding, 87.4% mentioned vaginal bleeding during childbirth, 54.3% considered the means of transportation, 4.3% identified potential blood donors, only 11.3% saved money to use during emergencies, and 49.9% were accompanied by a family member during labour time (Tobin, Ofili, Enebeli & Enueze 2014:8).

The results of a qualitative study in Tanzania indicate that after the pregnancy is confirmed, the partner or husband starts to save money, and participants prefer governmental institutions, particularly hospitals, during labour time. The most dangerous signs mentioned by participants during pregnancy were excessive vaginal bleeding, fever, ruptured membranes, and obstructed labour (August, Andrea, Kayombo, Mbekenga, Axemo & Darj 2015:8).

In Rwanda, 59.9% of women had received education on how to prevent danger signs during pregnancy, labour, and childbirth, and the most frequently occurring danger sign mentioned was vaginal bleeding, which accounts for 61.1% during pregnancy, 73.1% during labour and childbirth, and 58% during the postpartum period. Only 17.7% saved money for emergencies (Kalisa, Smeele, Van Elteren, Van den Akker & Van Roosmalen 2018:18).

In a qualitative study at the community level conducted in Haiti, among the participants, the most mentioned danger sign that causes death to pregnant women was haemorrhage or severe bleeding, and the haemorrhage worsens if the long-distance travel to the health institution is prolonged. Other problems, like the economic status of women or their families, community infrastructure, better roads, skilled health professionals, and extended access to emergency care at a lower level, were obstacles to maternal health (MacDonald *et al* 2018:18).

A systematic review conducted in Uganda and Zambia revealed that the basic points necessary to improve maternal and newborn emergencies that should be set as a strategy were the interventions to improve accessibility to a basic emergency, monitoring maternal and neonatal care services, the construction of maternity waiting areas, the creation of an integrated communication and transportation system, the establishment of community-based linkage to the health facility, and the encouragement of saving for delivery as part of birth preparedness and complication readiness mechanisms (Ngoma *et al* 2019:7).

A research study in low- and middle-income countries revealed that when a woman's first birth is without complications, she may assume that giving birth at the facility for the next birth is unnecessary. The decision to give birth mostly relies on a decision made by elderly women, husbands, other family members, and neighbours (Bohren *et al.*, 2014:11). Study findings from Ghana on 600 postpartum women revealed that 30.5% identified a place to give birth, 18% planned the means of transportation for emergencies, and 32.7% saved money to utilise during childbirth (Saaka & Alhassan 2021:11).

### **2.5.2 Level of birth preparedness and complication readiness practice in Ethiopia**

A research study in Arbaminch Town, Ethiopia, indicated that of the 421 pregnant women (57.7%) were ready to prevent birth complications, 86.7% identified the places of birth, 74.3% saved money to cover the expenses during birth, 64.6% prepared essential items for the birth, 48.9% identified skilled birth attendants, 62.5% identified an early sign of an emergency, 74.3 arranged an emergency fund, 70.8% identified a mode of transportation, 28.5% arranged blood donors, and 64.6% identified institutions that provide 24-hour EMOC services (Dessu, Dawit & Bojola 2019:2).

The pooled results of the studies in Ethiopia showed that 32.4% of pregnant women were prepared for a safe birth and to prevent complications; the lowest birth preparation and complication readiness was 16.5% from the Robe District, Oromia. Furthermore, the study assessed the awareness of danger signs. The

highest awareness of detecting danger signs was 58.6% of women attending ANC at Dillchora Hospital, Dire Dewa, and the lowest awareness of danger signs detected was 28% in the Adigrat Tigray Region (Berhe, Muche, Fekadu & Kassa 2018:15).

A study on the quality of ANC service among 350 pregnant women attending ANC in a public health facility in the Chenchu District, Gamogofa Zone, Ethiopia, showed that 65.1% of the respondents did not get counselling on the danger signs of pregnancy. Among the counselled participants, a minimal number of pregnant women got information on the following danger signs: 30% about vaginal bleeding, 19.4% about severe headache, 14.4% about offensive vaginal discharge, 7.4% about blurred vision, and 6% about leg and facial oedema. Concerning BPCR plans, only 17.4% were counselled on the place of delivery, 2% on money-saving, and 1.4% on access to transportation (Abebe, Alemayehu, Gebremariam & Dirar 2017:4).

A community-based mixed methods study on 707 pregnant women at the Arba Minch Zuria woreda showed that most of the 88.5% of respondents saved money to use for a birth complication, only 27.3% of participants identified skilled birth attendants, and 5% of the respondents identified blood donors for when a complication happened. In this study, the qualitative study participants agreed with the importance of birth preparedness and complication readiness action for a healthy pregnancy outcome, but sometimes labour is unpredictable and can happen at midnight or during an unexpected time; thus, it is challenging to immediately act when labour occurs due to low socioeconomic status and poor infrastructure accessibility of transportation to health facilities (Andarge, Nigussie & Wondafrash 2017:17).

The study conducted in Northern Ethiopia among 1796, gave birth mothers indicated that 49.9% of the respondents travelled more than 30 minutes on foot to reach a nearby health facility, 78.6% of mothers were assisted by skilled professionals during their recent births, 36.7% of the mothers had at least four visits to the ANC, the majority of 88% of the participants only had one ANC visit, and

96.6% of the participants had no first-week postnatal care visit (Fisseha, Berhane, Worku & Terefe 2017:9).

A retrospective study conducted on maternal health in the community caring for the future on 640 non-booked and 250 booked mothers' cases of obstetric emergencies revealed that the prevalence of obstetric emergencies in non-booked cases was 29.7% and in the booked mothers' cases was 4.49%. Seventy-six percent of non-booked mothers resided in a rural area, and 23.69% resided in an urban slum area. Eighty-four percent of non-booked mothers were not educated, and 71% of non-booked mothers had no ANC follow-up at all. Occurrences of obstetric emergencies were 21.8% obstructed labour, 9.7% antepartum haemorrhage, and 9.25% eclampsia. The causes of obstetric emergencies were the lack of transportation to or communication with EMOC facilities (34%), the lack of an appropriate person to detect the problems, and the lack of early referral to EMOC in 40% of the cases (Lakshmi & Jyothi 2017:4).

## **2.6 AWARENESS OF BIRTH PREPAREDNESS AND COMPLICATION READINESS**

The outcome of pregnancy during adolescence is more complicated than becoming pregnant at an appropriate age. According to the study done on 134 adolescent pregnant women, only 19.4% knew the danger signs during pregnancy, 29.1% knew the danger signs during labour and childbirth, 14.9% knew the danger signs that may appear during the post-partum period, and the most dangerous signs mentioned by the participants were vaginal bleeding (Teekhasaenee & Kaewkiattikun 2020:11).

### **2.6.1 Awareness of birth preparedness and complication readiness practice globally**

According to findings of a study in Fako Division, Cameroon, on pregnant women assessed for awareness of birth preparedness, 79.1% were aware of birth preparedness, 29.4% mentioned saving money for transportation, 27.6% identified skilled birth attendants, and 44.2% had information about saving money for emergencies (Bobga *et al* 2022:37).

The level and determinants of birth preparedness and complication readiness study in a rural area of Bangladesh among 22662 participants, the proportion of sound knowledge, and the ability to recognise three or more danger signs in pregnancy and childbirth were 26% and 23%, respectively (Pervin *et al* 2018:13).

In the study conducted in a rural area of Nigeria among 390 couples, the knowledge of birth preparedness and complication readiness was as follows: 78.7% of the respondents had sound knowledge concerning the detection of obstetric danger signs; 70.3% identified vaginal bleeding; 63% prolonged labour; and, related to ANC visits, only 26.7% of the participants had at least one visit; and 23% planned to give birth in a health institution. A limited number of participants gave birth in health institutions because of poor access to transportation and a low socioeconomic status, among other factors (Ehiemere, Ilo, Umeh, Maduakolam & Ezeugwu 2017:9).

The facility-based cross-sectional finding on 345 pregnant women in Cameroon's Bamenda Health District revealed that 46.1% had heard about birth preparedness; most of the 89.3% received information from health workers during ANC visits; the most information given to the participants was where to give birth, related to the knowledge of the danger signs of pregnancy, 87.5% knew some danger signs, while 12.2% did not know any danger signs (Ijang *et al* 2019:19).

According to a systematic review in low- and middle-income countries, identifying skilled birth attendants ahead of complications was the common core point to prevent pregnancy and childbirth emergencies in all the reviewed articles. Some studies elaborate more on the importance of providing clear information during ANC by skilled birth attendants for pregnant women (Solnes Miltenburg, Roggeveen, Van Roosmalen & Smith 2017:17).

Regarding husbands' participation in maternity care in Northern Nigeria: among 400 husbands who participated, the study found that 51.9% of men identified vaginal bleeding as a danger sign, 37.8% believed it was a convulsion, 33.2% linked it to a loss of consciousness, and 4.1% considered fever a severe danger sign. The majority of participants mentioned that 96% of pregnancies were

unplanned, 30.8% of men planned to seek care for their wives during pregnancy and childbirth, 24.2% facilitated transportation, 19.5% saved money for an emergency, and a minimal number of men were eager to donate blood (Iliyasu, Abubakar, Galadanci & Aliyu 2010:14).

### **2.6.2 Awareness and knowledge of birth preparedness and complication readiness practice in Ethiopia**

According to a study conducted on 442 primigravida women in Addis Ababa concerning the knowledge of birth preparedness, 84.1% knew about a series of health problems, 65.9% mentioned vaginal bleeding, 50% cited severe headache, 30.3% said congestion, 19.2% mentioned fever, and 34.2% said labour lasting more than 12 hours is a danger sign. Concerning danger signs during the post-partum period, 63% are familiar with danger signs; among these, 55% mentioned vaginal bleeding, 36.7% mentioned severe headache, 28.2% said blurred vision, and 18.5% identified convulsion as a danger sign (Mulugeta, Giru, Berhanu & Demelew 2020:17).

An institutional-based cross-sectional study in a selected hospital in Addis Ababa on 277 pregnant women revealed that 72% of the participants were prepared for birth and to prevent its complications, 51% said the source of information was a health professional, and 32% said health extension workers. The factor determining the birth preparedness practice income of the participants was significant for those with a monthly income of more than 1000 ETB; the participants were four times more likely to practice birth preparedness and complication readiness activities (Challa, Asseged, Woldeyohannes & Tekalegn 2018:10).

In a qualitative study in the Sidama Zone, Ethiopia, on barriers to utilising maternal health services, the reasons that hampered the mother were mentioned by most FGD participants and health extension workers, and the male participants mentioned that women had a low perception of risks in pregnancy and did not seek any maternal health services if they felt well during their pregnancy. Some participants also confirmed that they did not seek care unless they were sick or had complications (Kea, Tulloch, Datiko, Theobald & Kok 2018:18).



A community-based cross-sectional study in the Farta District, Ethiopia, among 676 mothers who gave birth before the 12 months preceding the survey found that 23.1% knew the danger signs during pregnancy, 30.8% were knowledgeable about the danger signs during labour and delivery, and 12.4% were only familiar with danger signs that occur during the postpartum periods. The most commonly mentioned danger sign mentioned by the participants (51.2%) was severe vaginal bleeding (Limnih, Belay & Tassew 2019:19).

A comparative study conducted between urban and rural areas on birth preparedness and complication readiness practice in the Anuak Zone of the Gambela Region among 411 urban women and 209 rural residents determined that the knowledge of participants on the key danger signs was the most common type of key danger sign mentioned by the participants during pregnancy, childbirth, and the postpartum period. The proportion of pregnant mothers from urban areas who identified vaginal bleeding spontaneously during pregnancy was 33.5%, 68.7% identified labour and childbirth, and 54.8% identified the postpartum period. The participants in the qualitative study discussed that the most frequently mentioned danger signs were vaginal bleeding, prolonged labour, swelling of the leg, and retained placenta (Letose, Admasu & Tura 2020:20).

According to the study findings in Southern Ethiopia on knowledge of the obstetric danger signs, 73.5% of the participants mentioned vaginal bleeding, which was the most dangerous sign during pregnancy; 67.7% mentioned childbirth; and 54.9% mentioned during the postpartum period. Other danger signs mentioned were labours lasting longer than 12 hours (34.1%), swollen hands (15.8%), blurring or blurred vision (8.1%), water breaking before the start of labour (12.1%), and convulsions (4.8%) (Azeze, Mokonnen & Kercho 2018:16).

The study findings in Debre Berhan, Ethiopia, among 405 mothers revealed that 62.7% had good knowledge of danger signs occurring during pregnancy, 55.1% stated during labour, and 51.8% said during puerperium. The most mentioned danger sign was excessive vaginal bleeding, which occurred in 66.9% of cases during labour and childbirth. Other danger signs mentioned were swollen hands and faces (33.1%), reduced or absent foetal movement (29.1%), high fever

(39.8%), and foul-smelling vaginal discharge (37%) (Negese, Hailemeske & Wassihun 2019:11).

A cross-sectional study of the knowledge, attitudes, and practice concerning the danger signs in Harar Town, Ethiopia, among 310 pregnant mothers indicated that 70% of the respondents were aware of the danger signs of pregnancy. The source of information was their peers who had previous experience, and the most dangerous signs mentioned by the participants included persistent vomiting (33.9%), leakage of fluid before childbirth (31.3%), severe headaches (28%), and blurred vision (Leta 2019:8).

## **2.7 FACTORS AFFECTING BIRTH PREPAREDNESS AND COMPLICATION READINESS PRACTICE**

### **2.7.1 Educational level**

A study conducted in Tanzania among 428 women who gave birth recently on the determinant factors of birth preparedness and the complication readiness practice indicated that the odds of birth preparedness were two times greater among participants who had learned primary education compared to those with no education. Pregnant women's spouses who were employed were two times more likely to plan BPCR than pregnant women's unemployed spouses. Additionally, pregnant women who had started their first ANC visit earlier were twice as likely to plan BPCR than their counterparts (Bintabara, Mohamed, Mghumba, Wasswa & Mpembeni 2015:12).

According to the systematic review of Ethiopian pregnant women, maternal education level was positively associated with birth preparedness. Pregnant women with primary education and above were 2.4 times more likely to prepare for birth preparedness and prevention of its complications compared to non-educated pregnant women (*Ketema et al 2020:20*).

Isaac, Deگو and Barush (2016:4) conducted a study in the Dire Teyara district, Ethiopia, on 436 pregnant mothers and found that the variables that had significant factors associated with birth preparedness were the husband's education and

maternal education. Pregnant mothers with educated husbands were 2.8 times more likely to prepare for birth preparedness, and pregnant women with formal education were 2.46 times more likely to be educated in birth preparation and complication readiness than those without an education.

Pregnant women educated to college level or higher were five times more likely to plan birth preparedness than uneducated pregnant women, and those with secondary education were five times more likely to have a birth preparedness plan than those without formal education (Mesele & Anmut 2022:2).

A facility-based cross-sectional study among 555 pregnant women revealed that the factors associated with birth preparedness and complication readiness in this study were the odds of the 21 to 25-year-old respondents, who were 2.69 times more likely to prepare for birth and prevent complications than those aged 31 and above. Pregnant women knew of at least three danger signs, which was twice as much as what their counterparts knew. The odds of the educational status of the educated mothers were twice as high as the non-educated mothers' chances of accomplishing BPCR practice (Tafa, Hailu, Ebrahim, Gebrie & Wakgari 2018:15).

### **2.7.2 Distance to the health facility**

In a study in rural India on distance matters for institutional delivery, the institutional delivery rate was 36% in the study area; the mean distance to the nearby health institution was 4.96 kilometres, including private and public health institutions. Among the factors related to facility delivery was the distance of the health facility to the women's home, the probability of institutional deliveries decreased by 0.3% as the distance increased by one kilometre, and access to all-weather roads increased the utilisation of institutional delivery by 1.9% (Kumar, Dansereau & Murray 2014:46).

An in-depth interview participant from Nigeria mentioned that the distance from the home to the health facility could matter for planning birth preparedness. For pregnant women living far from the health facility, when labour started, they would be unable to reach the facility easily, so they were forced to give birth with a traditional birth attendant (Olowokere, Oyedele, Komolafe & Olajubu 2020:10).

A qualitative study in Rwanda among 88 participants revealed that the factors that influence women's lack of use of facilities during pregnancy and childbirth are low educational levels, lack of transportation, low income, abandonment by health workers, dirty maternity units, and the rudeness of the healthcare staff (Kalisa *et al* 2018:4).

A study conducted on 200 women who gave birth before the study in India revealed that 58.5% of the women were well prepared to have a safe birth, and 41.5 % were not prepared to prevent birth complications. The participants' education, occupation, socioeconomic status, family members, and the husband's education determine the BPCR practice. Family members and the husband's education play a significant role in attending BPCR practices (Sharma, Kumar, Singh Malik & Jangra 2020:8).

### **2.7.3 Residence area urban/ rural**

A systematic review conducted in sub-Saharan African countries also revealed that one of the access barriers to obstetric care services was geographical accessibility, which can affect the birth preparedness of the mother and the availability of the means of transportation to reach the required health facility. The minimum service acceptance facilities for EMOC facilities are minimal in sub-Saharan African countries, especially in remote and rural areas. For a mother with the complication of severe or persistent vaginal bleeding, the maximum time to stay alive is only two hours. Due to the poor transportation facilities, the mother dies before reaching the appropriate health facility (Kyeri-Nimakoh, Carollan-Olah & McCann 2017:6).

The research study conducted on rural resident pregnant women who gave birth at home revealed that the rural residence is the most determining factor for not planning for birth preparedness. A pregnant woman who has to travel less than one hour to the health facility is 2.52 times more likely to utilise maternal health services than pregnant women who travel more than one hour (Taye, Kebede & Yinges 2022:22).

According to a study in Gonder, Ethiopia, pregnant women's residency was a high-determinant factor in preparing for birth and giving birth at the health facility. The

women who reside in rural areas had nine times the risk of developing complicated labour due to not giving birth in a health facility compared with pregnant women who live in urban areas (Abiye, Abera, Tariku, Gelaye & Alayu 2022:11).

A research study in the Jimma Medical Centre, Ethiopia, found that pregnant women who live in rural areas were delayed two times more than mothers living in urban areas from reaching the delivery service on time. Among the reasons for the delay was a lack of early preparation before the onset of labour and living far from the health facility, which made it impossible to access transportation (Awel, Bagilkar & Fekecha 2022:32).

#### **2.7.4 Accessibility of the health facility**

A community-based cross-sectional study in Debre Marikose, Ethiopia, determined that the significant factors positively associated with birth preparedness concerning detecting the danger signs were the mother's occupation, the intended pregnancy, parity, and the ANC visit for the current pregnancy. The odds of having good knowledge about practising birth preparedness activities were 6.5 times higher among governmental employee mothers with access to health facilities than their counterparts. Women with a previous history of giving birth in a health facility were 2.6 times more likely than nulliparous women to have good knowledge about birth preparedness (Tsegaw, Cherkos, Badi & Mihret 2019:10).

The availability of health facilities to attend ANC and other maternal health services is inevitable. The research study conducted on factors influencing BPCR indicated that pregnant women who attended an ANC check-up four or more times during their last pregnancy were 3.78 times more likely to plan BPCR than pregnant women who attended less than four times or those who did not attend an ANC visit (Noor, Shahid, Hydrie, Imran & Shah 2022:17).

#### **2.7.5 Health education and women's forum**

A study conducted on the effect of pregnant mothers' forum participation on BPCR in the Dale District, Southern Ethiopia, revealed that the factors that affect the BPCR of pregnant women positively were the odds of BPCR among women who

attended at least one ANC visit, which were nearly four times greater than their counterparts. Furthermore, the odds of pregnant women with a history of previous births in health institutions were 2.4 times greater than their counterparts, and pregnant women who participated in women's forums were 3.55 times more prepared than women who did not participate in women's forums (Bogale, Astatkie & Wakgari 2019:12).

The research study on women's development group leaders in Ethiopia showed that the women's development group greatly contributes to preventing obstetric complications by creating an awareness of the benefits of birth preparedness and utilising other maternal health services. Despite having a low educational level and receiving training through a brief orientation, the findings indicated that they had limited knowledge of maternal health but had engaged in many activities related to improving maternal and neonatal health at the grass-roots level (Ashbir, Medhanyie, Mulugeta, Persson & Berhanu 2020:13).

A research study on improving the perception of maternal health services in India showed that increasing the number of frontline health workers at the grassroots level increased the utilisation of birth preparedness among pregnant women. Pregnant women who attended frontline health worker health education and maternal health services were 3.43 times more likely to plan birth preparedness than their counterparts (Abdalla, Pair, Mahta & Ward 2022:12).

A qualitative research study on booking early for ANC visits indicated that the ANC provider emphasised health education and counselling opportunities for pregnant women. If a woman booked late for an ANC visit, she missed counselling services for BPCRP. Health education and counselling services are positive factors for pregnant mothers' early planning and birth preparedness (Maharaj & Mohammadnezhad 2022:17).

A narrative review of cross-sectional studies revealed that knowledge of birth preparedness and key danger signs in pregnancy, delivery, and post-partum significantly influenced the use of skilled attendants. The finding further indicated that the education, parity, marital status of the mother, and place of residence were

significant predictors of knowledge on birth preparedness and complication readiness in Guinea, Ethiopia, Uganda, Nigeria, Ghana, Malawi, and Tanzania (Sumankuuro, Crockett & Wang 2016:3).

The qualitative study in Ghana revealed that when the participants were asked to give their opinion on the warning signs of pregnancy, all the participants related some of the warning signs, such as pain, excessive bleeding, severe stomach pain, severe headache, and swollen feet, related to birth preparedness and complications readiness practice. They all knew that they had to be prepared to give birth, but some of them had no or little idea about the required preparations like transportation and blood donation. Most of them identified their place of birth. Among the factors that hampered the preparation of a safe delivery were poverty and the low socioeconomic status of the respondents (Diema, Japiong & Dodam 2019:7).

#### **2.7.6 Attitudes of health professionals**

A qualitative research study in North-West Ethiopia found that one of the factors that prevent pregnant women from utilising maternal health services is the negative attitude of health professionals towards the mothers. Some of the health professionals exhibited unethical behaviour and scared the mothers away, which made the pregnant women decide against giving birth in the health facility (Nigusie, Azale, Yitayal & Derseh 2022:19).

A qualitative research study conducted in Addis Ababa, Ethiopia, revealed that most focus group participants preferred a health facility to give birth because of their awareness of obstetric complications that can occur during childbirth, as informed by the health professionals. Among the other preference factors was satisfaction with the service given by health professionals and a cost-free service, which prompted them to choose a health facility birth over giving birth at home (Shifraw, Berhane, Gulema, Kendall & Austin 2016:16).

Determining health professionals' perceptions and attitudes can help detect the gap in birth preparedness among pregnant women. A qualitative research study

indicated that the factor that caused discomfort in a woman who became pregnant at an early age or an older age for a late ANC visit was that some health professionals discouraged them as they encountered a higher risk of obstetric complications. This leads to not planning early birth preparedness practices for pregnant women (Maharaji & Mohammadzhad 2022:17).

### **2.7.7 Socioeconomic status of pregnant women**

A mixed research study in Nigeria on the factors that made pregnant women decide against attending maternal health services found that the low socioeconomic status of the women led to a lack of money, birth unpreparedness, insufficient transportation, an unsupportive husband, and the perception that it was not necessary to be assisted by skilled birth attendants. Other sociocultural factors included hospital delivery being regarded as unnecessary, women not wanting to be seen by male health workers, and giving birth being an easy and home-based tradition (Ajayi, Ahinkorah & Seidu 2023:15).

### **2.7.8 Marital status of the pregnant women**

A research study conducted on married women's husbands in Haramya, Ethiopia, indicated that the incidence of the husbands' plans to participate in birth preparedness was 50.6%. Among the determinant factors, husbands who discussed the birthplace with their spouses were 6.48 times more likely to plan birth preparedness than those who did not discuss it with their wives (Sufian *et al.* 2022:10).

The research study findings in the Walaita Sodo District, Ethiopia, showed that male partner involvement during health facility visits contributed to birth preparedness and complication readiness at 30.9%. Women who had one ANC follow-up visit and were accompanied by their husbands during the ANC visit were 2.9% more prepared for birth than their counterparts (Paulose, Awoke, Mekonnen & Arba 2020:20).

Husbands who were involved in a birth preparedness plan were 4.17 times more likely to identify a skilled birth attendant for their wives than husbands who did not



plan birth preparedness with their wives (Yeshitila & Memah 2022:22). The research study conducted in Addis Ababa, Ethiopia, revealed that pregnant women accompanied by their husbands during ANC visits were 2.93 times more likely to plan skilled birth attendants to use during childbirth (Mohamed, Johnston, Vackova, Hassen & Yi 2019:19).

## **2.8 INTERVENTION STRATEGIES TO IMPROVE BIRTH PREPAREDNESS**

### **2.8.1 Birth preparedness intervention strategies by other countries**

The WHO has set a strategic plan to facilitate birth preparedness and interventions during obstetric emergencies. Among the prioritised strategy areas are the mothers getting the desired place of birth, identifying the preferred birth attendants, the accessibility of the closest health facility for birth and in case of complications, supplies and materials essential to bring to the health facility, labour and birth accompanying, transportation to the birth facility, and in the case of complications, a compatible blood donor (WHO 2015:2).

According to the further analysis of the demographic and health survey (DHS) of Nepal conducted on the maternal health service, among the strategies that strengthen birth preparedness and complications readiness practices were sustained and strengthened information education and communication (IEC) and behavioural change communication (BCC), which enable pregnant women to utilise early ANC check-ups, increase women giving birth in health institutions, and attend timely ANC check-ups (Aryal *et al* 2019:118).

A study in Zambia revealed that male involvement in decision-making and pursuing health education with the wife during the ANC visit were good strategies for improving birth preparedness practices. Women who received health education with their husbands and decided together were more likely to make adequate birth preparation than those who made the decision alone (Chipili 2017:5). Discussion between health professionals and pregnant women, their families, and communities is mandatory to seek care for the women during pregnancy, childbirth, and the postnatal period (Smith, Portela & Marston 2017:17).

A qualitative study conducted in rural Tanzania noted that as one of the mechanisms to improve the birth preparedness practice, the rural health professionals mentioned that the availability of drugs and medical supplies in health facilities during birth is crucial because it attracts the women to give birth in the health facility. To solve the shortage of resources at the district level, various efforts were made, including fee collection from the community and returns from the national health insurance fund and community health fund, which enabled them to buy medications and other materials during childbirth (John, Mkoka, Frumence & Goicolea 2018:18).

The WHO (2016:8) mentions that effective prevention and management of obstetric complications during late pregnancy, childbirth, and early neonatal periods are considered to reduce the number of maternal deaths, antepartum and intrapartum-related stillbirths, and early neonatal deaths; therefore, improving quality of care and preventive and curative care during this critical period would have the highest impact on maternal, foetal, and newborn survival.

A study conducted to address the first delay in saving mothers' lives in Uganda and Zambia revealed that decreasing and removing barriers that contribute to the first delay in accessing healthcare services is critical to achieving a sustainable reduction in preventable maternal and neonatal mortality (Serbanescue, Goodwin, Binzen & Morof 2019:7).

The systematic review conducted in low- and middle-income countries showed that, as a strategy to access pregnant women during pregnancy and childbirth and in emergencies, identification of cost-effective transportation interventions could contribute to increasing the utilisation of skilled obstetric care and minimising high maternal, neonatal, and infant mortality in low- and middle-income countries (Ehiri *et al* 2018:7).

The systematic review on the implementation of health promotion for mothers and newborns showed that emphasising implementation strategies for current care practices related to cultural or social norms is mandatory for the success of maternal health programmes. For instance, the existing beliefs about pregnancy

and childbirth being normal processes without risking the use of maternity services, along with the extent to which maternal health complications should be recognised and how they affect birth and complication readiness preparations, should be identified (Miltenbur *et al* 2017:17).

### **2.8.2 Birth preparedness intervention strategies in Ethiopia**

A research study on maternity waiting areas as one of the strategy components to improve birth preparedness in Ethiopia indicated that 8.4% of the study participants only stayed in the maternity waiting room until they gave birth to their first child to prevent obstetric complications. The reason for most pregnant women not staying in the maternity waiting room was the economic status of the women, the history of previous pregnancy birth outcomes, and the fact that if they gave birth to a healthy child, they did not plan birth preparedness for the subsequent pregnancy (Gurara, Van Geertruyden, Tariku, Draulans & Jacquemyn 2021:18).

According to the Federal Ministry of Health Ethiopia (FMOHE), in the reproductive health strategies guidelines from 2021 to 2025, one of the strategies for decreasing maternal and newborn mortality due to obstetric emergency complications is implementing a birth preparedness and complication readiness plan among pregnant women through health extension workers at each smallest unit of the district (Kebele) throughout the country (FMOHE 2021:99).

Since 2003, the Ethiopian Ministry of Health has launched a community-based healthcare system (Harvard School of Public Health, 2014:4). One of the approaches was assigning female health extension workers to each established health post at the grassroots level to conduct maternal health services (FMOHE 2015:20). Despite considerable progress on birth preparedness and other maternal health services observed, many challenges still exist for most pregnant women to access maternal health services (Gebrehiwot, San Sebastian, Edin & Goicolea 2015:10).

## **2.9 CONCLUSION**

To study the potential and challenges presented by the experience and propose ways of enhancing pregnant women's birth preparedness, this chapter reviewed the literature published on the BPCR of pregnant women in both developed and developing nations. Findings reported in the relevant literature enabled the researcher to validate the research issues and respond to the research questions to compare the results of this study with those of earlier studies and identify any gaps. Extensive literature review procedures were used to identify the literature. Chapter 3 presents the study's research methods, strategies, and techniques.

## **CHAPTER 3: RESEARCH DESIGN AND METHODS**

### **3.1 INTRODUCTION**

A research methodology comprises the rules and procedures by which knowledge is generated and shared; it applies the criteria commonly used to evaluate reliability, replication, and validity (Garg 2016:60). Methodology, the theory of the organisation of activity, rests upon scientific knowledge. A researcher involved in scientific activity must have a clear and conscious conception of science, its organisation, the laws of science development, and the structure of scientific knowledge. In addition, a researcher must conceive the criteria for new knowledge to be obtained as a result of investigations, as well as the forms of scientific knowledge to be used for expressing the results of investigations (Kivunja & Kuyini 2017:6). This chapter discusses the research designs and the research methods in detail.

### **3.2 RESEARCH DESIGN**

This study uses a sequential explanatory mixed methods study design to answer the research questions formulated by the researcher.

A study design involves the identification and development of the procedures and logical arrangements required to undertake a study to ensure its validity, objectivity, and accuracy (Khanday & Khanam 2019:3). Furthermore, a study design can be thought of as the logic or master plan of research that throws a light on how the study is to be conducted. It shows how the research study's major parts, including the samples or groups, measures, treatments, or programmes, work together to address the research questions. In effect, a research design is like an architectural outline.

Mixed methods research is an approach to an inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks. This form of inquiry assumes that combining the two methods'

approaches provides a more complete understanding of a research problem than either approach alone (Creswell 2014:32).

According to Creswell and Creswell (2018:357), the explanatory sequential mixed approach is a mixed method design that appeals to individuals with a strong qualitative background or from fields relatively new to qualitative approaches. This research comprises two phases that will emphasise gathering evidence in preparation and developing strategies for birth preparedness. According to Creswell (2014:45), a mixed study design of quantitative and qualitative research involves combining or integrating qualitative and quantitative research data in a research study. Qualitative data tend to be used in open-ended questions without a predetermined response, while quantitative data usually include closed-ended questions. The field of mixed research is relatively new, with the major works that developed it stemming from the middle to late 1980s. Early thoughts about the value of multiple methods, called mixed methods, resided in the idea that all methods had biases and weaknesses, and the collection of both quantitative and qualitative data neutralised the weaknesses of each form of data triangulation.

In explanatory sequential mixed methods research, the researcher first does quantitative research, then analyses the findings and expands on the findings to provide a more thorough qualitative analysis. Fields with a strong quantitative orientation frequently use this kind of design (Subedi 2016:7). The researcher started by collecting and analysing quantitative data to obtain a general understanding of the research problem and then collecting qualitative data and analysing it to refine statistical results by exploring the views of participants. A sequential explanatory mixed method design was used to conduct this research study.

### **3.2.1 Phase 1: Quantitative design**

Collecting and analysing numerical data entails quantitative research. The data can be extrapolated to a larger population and used to detect patterns, averages, make forecasts, establish causal linkages, and generalise findings (Bhandari 2020:1).

The researcher used a cross-sectional quantitative research design that determines the relationship between diseases or other health-related characteristics and other variables of interest as they exist at a particular point in time (Kayi 2018:7). The researcher used a cross-sectional study design and a standard questionnaire to assess the BPCR practice of pregnant women in the defined study population Arsi, Zone, Oromia, Ethiopia.

Wang and Cheng (2020:158) list the strengths and limitations of cross-sectional studies as follows:

### **Strength of cross-sectional studies**

They are relatively quick and inexpensive. They provide prevalence information, and the researcher controls the measurements used, can study several factors or outcomes simultaneously, and often offers early clues for hypothesis generation.

### **Limitations of cross-sectional studies**

There is a potential bias in measuring exposure. Cross-sectional studies do not allow the true temporal sequence of exposure and outcome to be ascertained and cannot shed light on the cause-and-effect association. There may be potential sampling or a survivor bias.

### **3.2.2 Phase 2: Qualitative designs**

The researcher conducted descriptive qualitative and explanatory research during the second phase of the research. Qualitative research can be explained as the study of natural phenomena and is appropriate for answering questions about why something is not observed and assessing complex multi-component improvement (Busetto, Wick & Gumbinger 2020:14). The descriptive qualitative method is particularly well suited to the health environment because it offers factual responses to inquiries about people's attitudes towards specific items and pinpoints the elements that either encourage or discourage their use (Colorafi & Evans 2016:1). The researcher used this study design to explore the opinions of pregnant women towards BPCR practice to prevent obstetric emergencies.

Howlett (2013:2) identified the strengths and limitations of the study as follows:

### **Strength of qualitative studies**

It provides a great depth of response and a considerable consequential understanding of the economic, political, social, and cultural environment and organisational factors that influence health. Understanding how participants make sense of their experiences of health and disease. Qualitative research can complement quantitative methods, as a qualitative description can be a prerequisite for good quantitative research, particularly in areas that have received little previous investigation.

### **Limitations of qualitative studies**

Qualitative research explores phenomena in-depth but does not measure differences or relationships between variables. It is time-consuming, and there may be difficulty sharing data due to the size of the recorded audio and video data created during an interview or field observation exceeding the storage capacity of the email attachment. Anonymity can also be a challenge in qualitative research (Bengtsson 2016:2).

## **3.3 RESEARCH METHODS**

This study was conducted among pregnant women attending ANC services in two hospitals and three health centres in Arsi Zone, Oromia, Ethiopia.

### **3.3.1 Research methods for the quantitative part**

#### ***3.3.1.1 Population and sampling***

##### **Population**

In a research study, the population is the entire set of items from which you draw data, and the research findings are used practically (Shukla 2020:7).

The population of this research study was all the pregnant women who reside in the Arsi Zone.



## **Study population**

The study population is the, a conceptually bounded group of potential participants to whom the researcher may have access, representing the nature of the population of interest. To successfully define the study population, one must examine all the boundary considerations in an interactive manner to ensure that the end description of the study population is inclusive enough to provide sufficient data for the study (Casteel & Bridier 2021:16).

The study population for this study was pregnant women attending an ANC clinic in the selected health facilities of Arsi Zone.

## **Inclusion criteria**

Pregnant women attending ANC clinics in selected health institutions during the data collection period were based on the following criteria:

- a. Women who were currently pregnant.
- b. Pregnant women living in the selected district in which the health facility was located.

## **Exclusion criteria**

1. Pregnant women who were critically ill during the data collection period and were unable to give information.
2. Women who were currently not pregnant.
3. Pregnant women living outside the selected district in which the health facility was located.

## **Sampling**

To answer the research question, the researcher doesn't need to be able to collect data from all the cases; instead, a sample must be selected. The entire set of cases from which researchers' samples are drawn is called the population. Since researchers neither have the time nor the resources to analyse the entire

population, they apply the sampling technique to reduce the number of cases (Taherdoost 2016:5).

Sampling is an essential factor that determines the accuracy of the research and is classified as a probability or a non-probability sample. In probability samples, each member of the population has an equal chance of being chosen to be in the sample. Probability sampling methods include random sampling, systematic sampling, and stratified sampling. In non-probability sampling, the sample group is selected from the population, and how the sample differs from the population cannot be determined. Non-probability sampling includes convenience sampling, judgement sampling, snowball sampling, and quota sampling (Bhardwaj 2019:5).

A multistage sampling technique was used to select the study participants. In the first stage, districts were selected using a simple random sampling method called the lottery method. In the second stage, the eligible health facilities were selected by systematic random sampling after obtaining a list of health facilities from the Zonal Health Bureau.

Probability systematic random sampling technique was used to select two hospitals and three health centres from the health institutions found in the Zone by lottery. Then, based on the information obtained from the health institutions and the six-month flow of ANC attendant registration log-book data, the sample size was proportionally allocated for each selected hospital and health centre. Systematic random sampling was used to select the study participants by using a list of pregnant mothers from the ANC registration logbook during data collection time. The first client was selected randomly between one and the sampling interval until the required sample size was reached. The details of the sampling sites and sampling procedure are depicted in Figure 3.1.



**Figure 3.1: Diagram showing the sampling of study sites and sampling procedure of quantitative study respondents**

### **Sample size determination**

The sample size for this study was calculated using the single population proportion formula in Epi-Info version 7 based on the following assumptions: a 95% level of significance and a 4.5% allowable margin of error (precision). Regarding the proportion of birth preparedness and complication readiness practice taken from a similar study conducted in Butajera, Ethiopia, the overall magnitude of birth preparedness and complication readiness practice was 41.6% (Halil, Abdo, Kebede & Godana 2019:6). Finally, 10% was added for the non-response rate and

the missed follow-up with pregnant mothers. Ultimately, the final sample size was 1014.

### **Formula for sample size determination**

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

n= estimated sample size

z= 95% confidence interval (1.96)

d = degree of precision or margin of error (4.5)

p= proportion of BPCR taken (41.6)

Design effect = 2

### **3.3.2 Data collection**

Data collection is the process of gathering and measuring information on variables of interest in an established, systematic fashion that enables one to answer the stated research questions (Ewen 2018:3).

Different methodologies can be used for data collection and analysis. Most are based on a core set of basic tools. These include interviews, FGDs, observations, photography, videos, surveys, questionnaires, and case studies. Data may also be generated through direct measurement, reviewing secondary data, and informal projects or programme management processes (Kabir 2016:9).

Data collection is the process of gathering and measuring information on variables of interest systematically to answer the stated research questions. The data collection component of research is common to all fields of study, including the physical and social sciences, the humanities, and business (Kabir 2016:9).

### **3.3.2.1 Data collection for the quantitative part**

A structured interviewer-assisted questionnaire was used to collect data for the quantitative part of the study. The questionnaire was developed by reviewing the relevant literature and the questionnaire guide (JHPIEGO 2004). The questionnaire was first drafted in English and translated into Amharic and Oromefa to be convenient for the respondents who spoke the local language. Then, it was translated again into English by a language expert to ensure its consistency.

Several questions were employed to address the study's objective and measure birth preparedness. Information on the sociodemographic characteristics, the obstetric history, awareness of the obstetric danger signs and practices of birth preparedness, and the personal and social factors influencing birth preparedness were included in the questions.

#### **3.3.2.1.2 Characteristics of the data collection instrument**

The questionnaire consisted of the following four parts:

Part 1: Sociodemographic information of the participants

Part 2: Past and present obstetric information of the pregnant women

Part 3: Birth preparedness service utilisation, planning action, intention, and awareness of birth preparedness

Part 4: The ability of pregnant women to identify obstetric danger signs during pregnancy, labour, and postpartum (Appendix 9)

The questionnaire was translated into Amharic and Afan Oromo, which are the local languages most spoken by the residents in the study area. The language translation increases the understanding and participation of pregnant women in the research study (Appendices 11 and 13).

### **Pre-testing of the questionnaire**

The data collection instrument was pre-tested on 5% of the total sample of this study in a similar setting, but in a non-selected health facility for this study. The tools were adjusted based on assessing their appropriateness throughout the data collection. The supervisor and the principal investigator supervised the data collection to maintain quality.

### **Data collection process**

The researcher selected five data collectors with bachelor's degrees in midwifery and nursing, as well as a health officer to collect the quantitative data for this research. In addition, two supervisors with Master of Public Health (MPH) degrees participated in this research study. All the data collectors and supervisors were fluent in English, Afan Oromo, and Amharic. Before starting the data collection, the data collectors and the supervisors took two days to provide training on the objective of the research, the content of the research tools, and how to maintain the confidentiality and privacy of the study participants. Permission to conduct the research study was secured from each health facility ahead of the data collection process. Before the data collection process started, information about this research was given to each study participant, and informed consent was obtained by signing a consent form to indicate their willingness to participate in the study. The data collection was conducted in a private room to maintain the privacy of the respondents.

Furthermore, the supervisors checked for the completeness of the retrieved questionnaires daily and provided technical support to the data collectors to ensure the quality of the data. The researcher prepared the necessary logistics before the data collection date. The researcher also conducted the overall supervision by travelling to the research study site and communicating with data collectors daily telephonically.

### **3.3.3 Data management and analysis**

#### **Quantitative part**

After data collection, the supervisors checked each questionnaire for completeness and consistency on the spot. The data were entered by Epi Info version 3.5.4 Statistical Package, and then transferred to SPSS version 26 for analysis.

Associations between dependent and independent variables were analysed using logistic regression. The variables with a P-value  $\leq 0.2$  in the bivariate analysis were entered into a multiple logistic regression model to control confounding variables. The odds ratio with a 95% confidence interval was used to show associations. A P-value of  $< 0.05$  was considered statistically significant in the multivariate analysis.

### **3.4 RIGOUR OF THE STUDY**

#### **3.4.1 Validity and reliability**

##### **Quantitative study**

According to Heale and Twycross (2015:18), in quantitative studies, validity is defined as the extent to which a concept is accurately measured, and reliability refers to the accuracy of an instrument that continuously has the same result when it is used in the same situation on repeated occasions.

##### **Validity**

Validity is divided into the following three parts:

##### **Content validity**

Content validity indicates whether the instrument adequately covers all the content that it should concerning the variable or whether the instrument covers the internal domain related to the variable, and a test is thorough if it covers the entire domain of the construct (Drew 2022:1). The data collection instrument was pre-tested on 5% of the total sample of this study. Adjustments to the tools were made based on assessing their appropriateness throughout the data collection to ensure content validity.

### **Construct validity**

Construct validity refers to whether you can draw an inference about the test scores related to the concept being studied. Three types of evidence in construct validity to enable a researcher to check if the instrument has construct validity are homogeneity, convergence and theory evidence (Heale & Twycross 2015:10). The collected data for this study were analysed and interpreted with set theories HBM and the Three Delays Models' theories to ensure the construct validity.

### **Criterion validity**

It identifies any other instrument that measures the same variable, and correlation can be used to determine the extent to which a different instrument measures the same variables. Criterion validity can be assessed in three ways: convergent validity, divergent validity, and predictive validity. Validity also focuses on the measuring futures of the research components; the researcher measures behaviours and the extent to which the research tools intend to measure what it is supposed to measure (Mohajan 2017:3). Criterion validity also measures the degree to which the study accurately reflects the specific concepts that the researcher is attempting to measure.

### **Reliability**

Reliability is concerned with the accuracy of technical measuring instruments (Mohajan, 2017:4). According to Noble and Smith (2015:18), assessing the reliability of the study findings requires researchers and health workers to make judgements about the soundness of the research in relation to the application and appropriateness of the research methods applied, and the integrity of the conclusion of the study findings (Noble & Smith 2015:18). This study aims to improve birth preparedness by developing a strategy to improve this in the Arsi Zone among pregnant mothers attending the ANC clinic in the public health facilities by using an explanatory sequential mixed study design.

The researcher described, explained, and documented a range of factors and strategies that affect pregnant mothers with regard to engaging in birth



preparedness action in the Arsi Zone selected health facilities. The pre-testing of the data collection tools was conducted in 5% of the total study participants to test the validity and reliability of the questionnaire before the actual data collection period in the health institution with a similar setup but who were not included in the study sample in the Zone. Based on the pre-tested questions, the tools were modified accordingly to ensure their validity and reliability.

### **3.5 RESEARCH METHODS FOR QUALITATIVE STUDY**

#### **3.5.1 Population and sampling**

##### ***3.5.1.1 Population***

A population is a set or group of all the units to which the research findings can be applied (Shukla 2020:1).

The pregnant women who did not participate in the quantitative part of the study participated in FGD. Health professionals who participated in the in-depth interview were those who were ANC service providers, MCH service co-ordinators, and health centre directors who were able to give appropriate information about the existing strengths and gaps of birth preparedness and the complication readiness practice of pregnant women, health professional and health facility level.

##### ***3.5.1.2 Sampling***

To recruit people or groups that are particularly knowledgeable about a topic of interest and people who can communicate their experiences and ideas articulately and expressively, purposive sampling procedures are typically used in quantitative research (Palinkas *et al* 2015:42).

Decisions regarding a qualitative research sample are taken after thoroughly considering the available data, options, and constraints. The researcher then evaluates the best sampling strategy, considering the relevance and credibility of the study (Shaheen, Pradhan & Ranajee 2019:28).

## **Sampling for FGD**

Three FGDs were conducted using a purposive sampling method to triangulate a quantitative and qualitative study to understand the birth preparedness and complication readiness practice and contributing factors. Out of these three FGDs, one from the hospital and two from the health centre were among the purposely selected 36 pregnant mothers who were not participating in the quantitative part.

## **Sampling for the in-depth interviews**

Three in-depth interviews of the key informants from one hospital and six in-depth interviews from the health centre among the purposively selected health professionals working as ANC service providers, an MCH co-ordinator in the health facility, and health centre directors were conducted to explore the strategies for improving birth preparedness services.

### **3.5.2 Sample size determination**

#### ***3.5.2.1 Sample size determination for FGD***

Twelve pregnant women who did not participate in the quantitative study were selected from each health facility to participate in the FGD. A total of 36 pregnant women participated in three sessions of FGD.

#### ***3.5.2.2 Sample size determination for in-depth interviews***

Nine health professionals were recruited for an in-depth interview working as MCH co-ordinators, ANC providers, and health centre directors from one hospital and three health centres to explore the cultural and social experience of pregnant women and health professionals regarding BPCR for strategies to improve the services.

### **3.5.3 Data collection instrument**

#### ***3.5.3.1 Data collection instrument for FGD***

An FGD guide and semi-structured questions were developed based on an existing related literature review and considered to identify useful issues to initiate the discussion between the FGD participants on the BPCR of pregnant women. The guide was developed with an open-ended question to enable the researcher to probe the participants' perceptions of the research topic.

### **3.5.3.2 Data collection instrument for in-depth interviews**

An interview guide was used, and structured questions were prepared in Amharic and Oromo, which included the opinions of health professionals towards birth preparedness, the challenges faced by health workers during the implementation of the BPCR plan for pregnant women, and the suggested strategies by health workers to improve the BPCR of pregnant women. The question was tested before the in-depth interviews to allow for the necessary tool modifications.

### **3.5.4 Data collection process**

#### **Focus group discussions**

The principal investigator and note-taker conducted three FGDs with the pregnant women who attended the ANC clinic. The venue and seating arrangements were aimed at making it comfortable for the participants. The FGDs were conducted in one hospital and three health centres, based on the interest of the participants, in a quiet place to prevent sound and other disturbances. After greeting the participants, the researcher introduced the objective of the FGD and requested that participants sign informed consent forms. Based on an FGD interview guide, pregnant women were asked to answer questions and discuss the issues related to the birth preparedness and complication readiness practice, the barriers to attending birth preparedness, and suggested strategies to improve birth preparedness, which were the core points covered during the FGDs (Appendix 13). The FGD was audio-taped; permission was sought from the participants, and the research assistant took notes simultaneously.

### **Individual in-depth interviews**

The in-depth interviews were conducted with the key informants, including midwives, nurses, and health officers; ANC service providers; MCH co-ordinators; and health centre directors. The objective of an individual in-depth interview was introduced to each participant, who was requested to sign the consent form before the interview was started. The interview guides included the following questions: what activities are conducted in the health facility related to BPCR, how many pregnant women ANC attendants planned for birth preparedness, what are the components of BPCR, what are pregnant women's challenges in implementing BPCR, and what are intervention strategies to improve BPCR? (Appendix 14). The audiotaped individual in-depth interviews were supplemented with the research assistants' notes, and it took seventy to ninety minutes to conduct each in-depth interview. The in-depth interview sessions were held in the participants' offices, and an appropriate time was arranged for conducting the individual in-depth interviews. The time taken to conduct each in-depth interview was 70 to 90 minutes.

### **3.5.5 Data analysis**

In a qualitative data analysis, standardised methods and techniques have been developed and used for analysing the qualitative data procedures where raw data, such as the transcriptions of semi-structured interviews, are organised, grouped and coded in higher-order descriptive or conceptual categories (Brailas, Tragou & Papachristopoulos 2023:7). In this study, the researcher used a thematic analysis and further divided it into main themes and sub-themes. An inductive thematic analysis approach for the reduction and analysis strategy helps to code, categorise, and summarise the data to analyse the basic concepts of the gathered data. To avoid an incorrect interpretation of the study findings, a thematic analysis was performed from the point of data collection to the report of the result to fit the study's objective. Qualitative data analysis software ATLAS.ti version 8 was used for further analysis of the data.

### **3.6 ETHICAL CONSIDERATIONS**

#### **Permission to conduct the study**

The ethical clearance letter was obtained from the UNISA College of Human Science Higher Degrees Committee (see Appendix 1). The UNISA Akaki Regional Branch Learning Centre wrote a support letter to the Oromia Regional Health Bureau Research and Laboratory Department to undertake the current study (Appendix 2). The Oromia Regional Health Bureau wrote a support letter to the Arsi Zone Health Office, following which the Arsi Zone Health Office wrote a letter of support to selected district health offices, and the district health offices wrote a support letter to the selected public health facilities to allow the study (see Appendices 3 and 4).

According to the WHO (2015:36), Ethical principles help address ethical issues and provide the structure for determining how to address or resolve ethical issues across participants' decision-making.

#### **Ethical principles related to the participants**

**Beneficence:** This is the duty to contribute to the client's well-being and entails doing the right things, taking the initiative, and preventing harm when it can be avoided (Forester-Miller & Davis 2016:6). During the data collection for this research study, the privacy of the participants was ensured by conducting the study in a private room.

**Non-maleficence:** This idea underpins a number of moral precepts, including the imperative to avoid causing pain or suffering while making difficult decisions about the continuation or discontinuation of life-sustaining treatment (Basil 2021:30). The study design and data collection procedures pertaining to this research prevented any needless emotional or psychological injury to the participants, and no harm or suffering was inflicted upon them during the study.

**Justice:** This principle suggests that the study population must be selected equitably, and the individual study participants must be treated equally (Mulaudzi,

Makhado, Greef & Botma 2022:42). All the study participants for this research study get an equal chance of giving their informed consent before conducting the data collection.

**Autonomy:** George, Shahul and George (2022:1) imply an individual who is master of him or herself and can act and make free choices and decisions without the constraints imposed by others. It also entails respect for informed consent (the right to refuse or choose their treatment).

**Informed consent:** This comprises the process of providing participants in clinical research with information about the specifics of the study, including any possible risks and benefits the study participants get from the research. Research involving human subjects must comply with this ethical and legal requirement (Arellano, Alcubila & Leguizamo 2023:15).

### **Anonymity**

Anonymity deals with the research study does not collect identification information of individuals such as names, addresses, e-mails, etc. (Sanders, Kitzinger & Kitzinger 2015:15).

In this research study, the participants were informed that they were participating in the study based on their willingness without depriving themselves of their rights. Besides, participants were told they could leave this study at any time without providing reasons. The names of the participants were not mentioned in any part of this study. During the interview process involving administering questionnaires, coding was done when they were discussing the issues. Informed consent was signed voluntarily before starting the session.

### **Privacy**

According to the Ohio State University IRB policy committee (2019:18), the privacy of research participants is defined as the state of being free from the observations, intrusion, or attention of others.

## **Confidentiality**

Confidentiality refers to data, it is about processing information disclosed by a person in a relationship of trust and ensuring that it is not disclosed to others without permission (Bos 2020:149). This research study ensured confidentiality by not disclosing sensitive information collected from the study participants in the data collection tools. Accordingly, the information collected from study participants was kept confidential and not made accessible to anyone except for the researcher, statistician, translator, and supervisors to maintain the confidentiality of the study participants.

### **3.7 ESTABLISHING TRUSTWORTHINESS IN QUALITATIVE STUDY**

Trustworthiness is described in different ways by researchers and refers to the quality, authenticity, and truthfulness of qualitative research and is related to the degree of trust and confidence the readers have in the result (Cypress, 2017:4). According to Singh *et al* (2022:21), without rigour, research is worthless and becomes fiction if it loses its utility. The attributes of rigour and quality suggest that the best practices for a qualitative research design relate to a step entailing designing, conducting, and reporting qualitative research in health professions educational scholarships. A research question should be clear, focused, and supported by the best conceptual framework. Rigour and quality contribute to selecting appropriate research methods, enhancing trustworthiness, thereby minimising researcher bias inherent in qualitative methodologies. Furthermore, it provides an understanding of the contextual information and enables the researcher to determine the credibility, transferability, dependability, and confirmability of the research findings (Johnson, Adkins & Chauvin 2020:1).

#### **3.7.1 Credibility**

Credibility is the ability to capture what the research aimed to study, meaning that the research design errors, misunderstandings, or the influence of unknown factors do not simply produce the results. Prolonged engagements can improve the credibility of the study in the field until data saturation occurs, and it limits researcher bias (Elmusharaf 2013:30). To conceptualise the study, the researcher

used FGDs, field notes and audio-taping to obtain a deeper understanding of the complexity of birth preparedness complication readiness and strategies to improve services.

### **3.7.2 Conformability**

Conformability deals with the fact that one can establish the degree to which the findings of this study information is a function solely of the participants of this study and the condition of the inquiry and not of the bias, motivation, prospective interests and finding facts. To achieve conformability, the researcher must demonstrate that the results will link up with the conclusion of ways that can follow and, as a process, be replicated (Moon, Brewer, Januchowski-Hartly, Adams & Blackman 2016:21; Stahl & King, 2020:44).

In this study, the researcher used the related and relevant literature to increase the readers' understanding of each step. The researcher checked the data collection approach and monitored the quality of the collected data. The raw data, notes taken, analysis, and interpretation of the data were documented and saved to realise the conformability of the findings.

### **3.7.3 Transferability**

According to Schloemer and Schröder-Bäck (2018:88), transferability implies that the research findings can transfer to other contexts and situations beyond the scope of the study context to increase their transferability. Qualitative researchers should focus on two key considerations: how closely the participants are linked to the study context and whether the participants need to be relevant community members related to the research study. This study selected pregnant women and health professionals from the research sites.

Furthermore, in this study, trustworthiness is ensured by achieving credibility, dependability, conformability, and transferability as a criterion for a qualitative study design.



### **3.8 SUMMARY**

This chapter presents all the research methods applied to conduct this study in detail. In addition, the chapter explains and describes the sequential explanatory mixed method study, which includes three phases: quantitative, qualitative, and a strategic guide to improving the BPCR of pregnant women in the Arsi Zone, Oromia, Ethiopia. Chapter 4 presents the analysis, presentation, and discussion of the research findings.

## **CHAPTER 4: ANALYSIS, PRESENTATION AND DISCUSSION OF THE RESEARCH FINDINGS**

### **4.1 INTRODUCTION**

This chapter deals with the results and discussion of the findings in line with the research questions to be answered. The questions were:

1. What is the level of birth preparedness among pregnant women attending antenatal care clinics in public health facilities of Arsi Zone Oromia, Ethiopia?
2. How is the awareness of birth preparedness among pregnant women attending antenatal care clinics in public health facilities of the Arsi Zone, Oromia, Ethiopia?
3. Which factors influence birth preparedness among pregnant women attending the antenatal care clinic in the Arsi Zone, Oromia, Ethiopia, public health facilities?
4. What are pregnant women's perceptions of birth preparedness during pregnancy, childbirth, and postpartum?
5. What are the possible strategies and mechanisms to improve birth preparedness among pregnant women attending antenatal care clinics in the public health facilities of the Arsi Zone in Oromia, Ethiopia?

This chapter presented both the quantitative and qualitative research findings. The quantitative part of the study was analysed using descriptive and inferential statistics. The descriptive statistics include frequencies, percentages, the mean or the median, the average, and the standard deviation of the variables from 1014 study participants who were interviewed to answer the research questions and the study's objective.

The qualitative study results presented data from three FGDs and nine in-depth interviews with the key informants. The three FGDs involved pregnant women who attended ANC clinics in one hospital and two health centres. Nine in-depth

interviews were conducted with midwives, MCH co-ordinators, and the directors of three health facilities.

## **4.2 SOCIODEMOGRAPHIC CHARACTERISTICS OF STUDY RESPONDENTS**

### **4.2.1 Ages of the respondents**

A total of 1014 pregnant women participated in this study. The minimum age of the participants was 15 years, the maximum age was 44 years, and the mean age was 27±6 years. The majority of the participants, 375 (37%), were between the ages of 25 and 29. This result was the same as in the research study on ANC care use in Ethiopia; most women were between 25 and 29 years (Tegegne, Chojenta, Getachew, Smith & Loxton, 2019:19).

### **4.2.2 Residence of the respondents**

Among the 1014 respondents, 609 (60.1%) resided in urban areas, and 405 (39.9%) lived in the rural area.

### **4.2.3 Marital status of the respondents**

The majority of pregnant women were married [951 (93.8)]. The other 63 (6.2%) were either divorced, cohabited, widowed, or single.

### **4.2.4 The educational status of pregnant women and their husbands**

Fewer than half (36%) of the pregnant women had a primary education, 226 (22.3%) of them reached the secondary educational level, 160 (15.8%) were at college and above, 135 (13.3%) could read and write, and 128 (12.6%) could not read and write. According to a 2021 research study in central Ethiopia, most (33%) pregnant women had primary education. The current research study's findings were similar to those of Girma, Walelign and Dejene (2021:17) regarding the socioeconomic status of the community.

Related to the husband's education, 501 (49.4%) had a primary education, 239 (23.6%) had a secondary education, 125 (12.3%) could read and write, 90 (8.9%) could not read and write, and 59 (5.8%) reached college level and above.

#### **4.2.5 Religion of the respondents**

In this research study, more than half, 513 (50.6%), of the participants were Muslim, 353 (34.8%) were Orthodox, and 148 (14.59%) were protestant and Catholic followers.

#### **4.2.6 Ethnicity of the respondents**

The majority of the participants, 750 (74%), were Oromo, 195 (19.2%) were Amhara, 53 (5.2%) were Gurage, and 16 (1.6%) belonged to other ethnicities.

#### **4.2.7 Pregnant women and their husband's occupation**

Most of the participants, 687 (67.8%), were housewives, 124 (12.2%) were government employees, 103 (10.2%) were merchants, 30 (3%) were farmers, 29 (2.9%) were daily labourers, 27 (2.7%) were students, and 14 (1.35%) were housemaids. The housewives (67.8%) in this research were more than 40% of the housewives in a research study conducted in South-West Ethiopia, which is near the urban town where women can get other jobs rather than being housewives (Wudu & Tsegaye 2021:13).

Fewer than half, 435 (42.9%), of the pregnant women's husbands were farmers, 239 (23.6%) were government employees, 118 (11.6%) were merchants, 128 (12.6%) were daily labourers, 18 (1.8%) were students, and 239 (23.6%) were working in non-governmental organisations.

#### **4.2.8 Monthly income of pregnant women and husbands**

Identifying the exact monthly income of the pregnant women and husbands was difficult because their monthly income was based on agricultural products, animal husbandry, and daily labour, except for some of the participants who were government employees. Just above half of the pregnant women, namely, 660(65.1%) earned less than 500 ETB (USD 10),18 (1.8%) earned less than 1000ETB (USD 20), and 336(33.1%) earned less than 10,000 ETB (USD 200).

Related to the husband's monthly income, fewer than half, 48 (4.7%), had a monthly income of less than 500 ETB (USD 10), 18 (1.2%) had less than 1000 ETB (USD 20), and most 948 (93.5%) had from 1000 to 10,000 ETB (20 USD to 200 USD) income.

#### 4.2.9 Using a mobile phone for communication

Of the 1014 participants, 810 (79.9%) had their own mobile phone, and 204 (20.1%) did not have a mobile phone for communication.

**Table 4.1: Sociodemographic characteristics of pregnant women, Arsi Zone, Ethiopia, 2022 (N=1014)**

Variables		Frequency	Percentage
<b>Age</b> Mean age 27±6 SD	15-19	82	8.1
	20-24	207	20.7
	25-29	375	37
	30-34	210	20.7
	35-39	108	10.7
	40-44	32	3.2
<b>Residence</b>	Urban	609	60.1
	Rural	405	39.9
<b>Marital status</b>	Married	951	93.8
	Divorced	20	2
	Cohabitation	26	2.6
	Widowed	10	1
	Single	7	0.7
<b>Pregnant women Education</b>	Read and write	135	13.3
	Cannot read and write	128	12.6
	Primary education	365	36

<b>Variables</b>		<b>Frequency</b>	<b>Percentage</b>
	Secondary education	226	22.3
	College and above	160	15.8
<b>Husband's education</b>	Read and write	125	12.3
	Cannot read and write	90	8.9
	Primary education	501	49.4
	Secondary education	239	23.9
	College and above	59	5.8
<b>Religion</b>	Orthodox	353	34.8
	Muslim	513	50.6
	Protestant	117	11.5
	Catholic	25	2.5
	Others	6	0.4
<b>Ethnicity</b>	Oromo	750	74
	Amhara	195	19.2
	Gurage	53	5.2
	Others	16	1.6
<b>Pregnant women's occupation</b>	Housewife	687	67.8
	Farmer	30	3
	Marchant	103	10.3
	Government employee	124	12.2
	Daily labourer	29	2.9
	Student	27	2.7
	Housemaid	14	1.4
<b>Pregnant women's monthly income</b>	0-500ETB (0-10USD)	660	65.1
	501-999 ETB (10.2-19.89 USD)	18	1.8

Variables		Frequency	Percentage
<b>1USD\$= 50 ETB</b>	1000-10,000 ETB (20-200USD)	336	33.1
<b>Husband Occupation</b>	Farmer	435	42.9
	Governmental employee	239	23.9
	Marchant	118	11.6
	Daily labourer	128	12.6
	Student	19	1.9
	None-government (NGO)	75	7.4
<b>Husband monthly income</b> <b>1USD\$=50 ETB</b>	0-500ETB (0-10USD)	47	4.6
	501-999 ETB (10.2-19.89 USD)	12	1.2
	501-999 ETB (10.2-19.89 USD)	948	93.3
<b>Own mobile phone</b>	Yes	810	79.9
	No	204	20.1

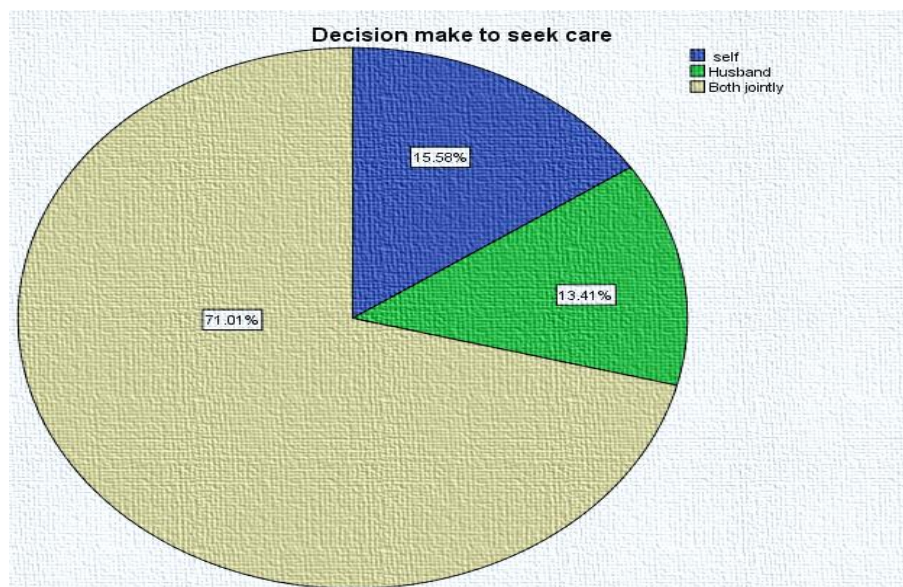
### 4.3 OBSTETRIC HISTORY OF PREGNANT WOMEN

#### 4.3.1 Family size of pregnant women

Identifying the family size of participants in the study is mandatory to forecast the obstetric condition of pregnant women. The majority of pregnant women, 669 (66%), had one to four family members, 321 (31.7%) had five to nine, and 24 (2.4%) had more than 10 family members. The mean family size of the respondents was 4.1 person  $\pm$ 2 S.D. Identifying the mean family size can determine the living standard of the family and the health status of pregnant women. The mean family size of 4.1 was less than 4.7 found in the Mini Ethiopia Demography and Health Survey (MEDHS) results from 2000 to 2019 (MEDHS 2021:12).

### 4.3.2 Decisions made to seek obstetric care

The majority of the respondents, 720 (71.01%), mentioned that the decision to seek medical care was made jointly with their husbands; for 158 (15.58%), it was a self-decision, and for 136 (13.41%), the decision was made by their husbands (see Figure 4.1).



**Figure 4.1: Decision to seek obstetric care Arsi Zone Oromia, Ethiopia, January 2022**

### 4.3.2 Decisions made to seek obstetric care

### 4.3.3 Age at first pregnancy of the respondents

The minimum age at the first pregnancy was 14 years, the maximum was 36 years, and the mean was  $20.75 \pm 3.87$  SD. More than one-third of pregnant women, 397 (39.2%), conceived their first pregnancy at the age of less than 19, which was a teenage pregnancy; the largest group, 495 (48.7%), was between 20 and 25 years; the other 112 (11%) was between 26 to 31 years; and the lowest number (10%) had their first pregnancy between 32 to 36 years.



#### **4.3.4 Number of pregnancies for respondents**

Of the 1014 pregnant women, 222 (21.9%) were pregnant for the first time or primigravids, more than half, 581 (57.3%), were pregnant two to four times, and 211 (20.8%) were pregnant more than five times. The minimum number of pregnancies among the participants was one, while the maximum was 10. The mean number of pregnancies was  $3.1 \pm 1.93$  SD.

#### **4.3.5 History of abortion and stillbirths of the participants**

Of the 1014 pregnant women, 792 had more than two pregnancies during this survey, from which 205 (25.8%) had an abortion. Of the 205 participants, 162 (79%) had an abortion once, 36 (3.6%) had it twice, and seven (3.4%) had an abortion three times preceding this survey.

Related to stillbirths, among the total of 1014 respondents, 73 (7.2%) had a stillbirth. Of the 73 respondents who had stillbirths, 58 (79.4%) had a stillbirth once, 12 (16.4%) had it twice, and three (4.1%) had it thrice.

#### **4.3.6 The time interval between the pregnancy and live birth**

The Ethiopian Mini Demography and Health Survey 2019 indicated that the mean birth interval in Ethiopia was 35.8 months. A short birth interval of less than 24 months can lead to harmful outcomes for both the newborns and their mothers, such as preterm births, low birth weight, and death (EMDHS 2021:28). This research study found that the minimum interval between pregnancy for 39 (4.9%) participants was 12 months (one per year). The maximum interval for 11 (1.38%) participants was 99 months (eight years), with a mean birth interval of  $28.29 \pm 23.35$  SD. Live births refer to children born to pregnant women who were alive during the interview. The number of live births in this study ranged from one to 10, with the mean number of living children being  $1.84 \pm 1.72$  SD.

**Table 4:2 Obstetric history of pregnant women in the Arsi Zone, Oromia, Ethiopia, 2022**

<b>Variables N=1014</b>		<b>Frequency</b>	<b>Percentage</b>
<b>Family size</b> 4.1±2 SD	1-4	669	66
	5-9	321	31.7
	>10	24	2.4
<b>Age at first pregnancy</b> 20.75±3.8SD	14-19	398	39.3
	20-25	494	48.7
	26-31	112	11
	32-36	10	1
<b>Number of pregnancies</b>	1	222	21.9
	2-4	581	57.3
	5-10	211	20.8
<b>History of abortion</b>	Yes	205	20.2
	No	809	79.8
<b>History of stillbirths</b>	Yes	73	7.2
	No	941	92.8
<b>Birth interval b/n pregnancy</b>	12 Months	39	4.8
	13-24 months	322	40.1
	25-48 months	304	38
	49-99 months	136	17.1

## **4.4 HEALTH SERVICE UTILISATION OF PREGNANT WOMEN**

### **4.4.1 Travelling time from home to a health institution**

The time taken from the home to the health institution for most 453 (44.7%) of the respondents was 15 to 30 minutes; for 219 (21.6%) participants, it was 30 to 60 minutes; for 172 (17%), it was less than 15 minutes; and for 170 (16.8%) participants it took more than one hour to arrive to the nearest health facility. This finding was higher than the findings from Jimma Zone Ethiopia, where 34.3% of the pregnant women travelled less than 60 minutes to a health facility to seek maternal health services (Tadele, Getachew, Fentie & Amdisa 2022:22).

### **4.4.2 Support given to pregnant women by husbands and relatives**

Getting support from husbands and relatives during pregnancy, labour, delivery, and the postpartum period plays a significant role in decreasing maternal mortality and morbidity. Among 1014 pregnant women, 904 (89.2%) received different types of support from their husbands; 751 (83%) were given money by their husbands for health service utilisation; just above half of 466 (51.54%) participants were accompanied by their husbands during health services; and for half, 446 (49.3%), the respondents' household responsibilities were shared with their husbands. The findings were similar to those of a study conducted in Harmya, Ethiopia, where 47.9% of husbands accompanied their wives during health service utilisation (Sufian *et al* 2022:10).

Related to the support from relatives, 575 (56.7%) of the participants received different kinds of support from their relatives. One hundred and eight nine (32.8%) were accompanied during health service utilisation, 102 (17.3%) received money for transportation and other expenses, and 284 (49.5%) were assisted with household activities, such as taking care of children and cooking.

**Table 4.3: Time taken from the home to the health facility, support by husbands and relatives of pregnant women in the Arsi Zone, Oromia, Ethiopia, 2022**

Variables N=1014		Frequency	Percentage
Travel time from the home to the health facility	< than 15 minutes	172	17.2
	15-30 minutes	453	44.7
	30-60 minute	219	21.6
	> than 1hour	170	16.8
Support from the husband	Yes	904	89.2
	No	110	10.8
Type of support from husbands	Accompany to H/F	466	51.5
	Give money for health service	751	83.1
	Shared household responsibility	446	49.3
Support from relatives	Yes	575	56.7
	No	439	43.3
Type of support from relatives	Accompany to H/F	189	32.8
	Give money for health service	102	17.3
	Household activities	284	49.5

#### **4.4.3 Previous pregnancy antenatal care visit and starting gestational month**

An ANC visit is crucial for the health of pregnant women and the foetus. Of the 792 pregnant women who were previously pregnant, the majority, 729 (92%), attended at least one ANC service before their current pregnancy. Most, 348 (47.7%), had a third visit, 170 (23.3%) had a fourth visit, 149 (20.4%) had a second visit, and 62 (8.5%) had their first ANC visit.

The majority of the pregnant women, 381 (52.2%), started their first ANC visit between four and six months, 274 (37.6%) were at less than three months, and 74 (10.2 %) started their first ANC visit between seven to nine months of the gestational age of their previous pregnancy. Pregnant women who conducted their first ANC visit after 16 weeks of gestation in this study were more than the pregnant women in the Jimma Zone; 48% of the pregnant women started their first ANC visit at 16 weeks of gestation (Tadele *et al* 2022:22).

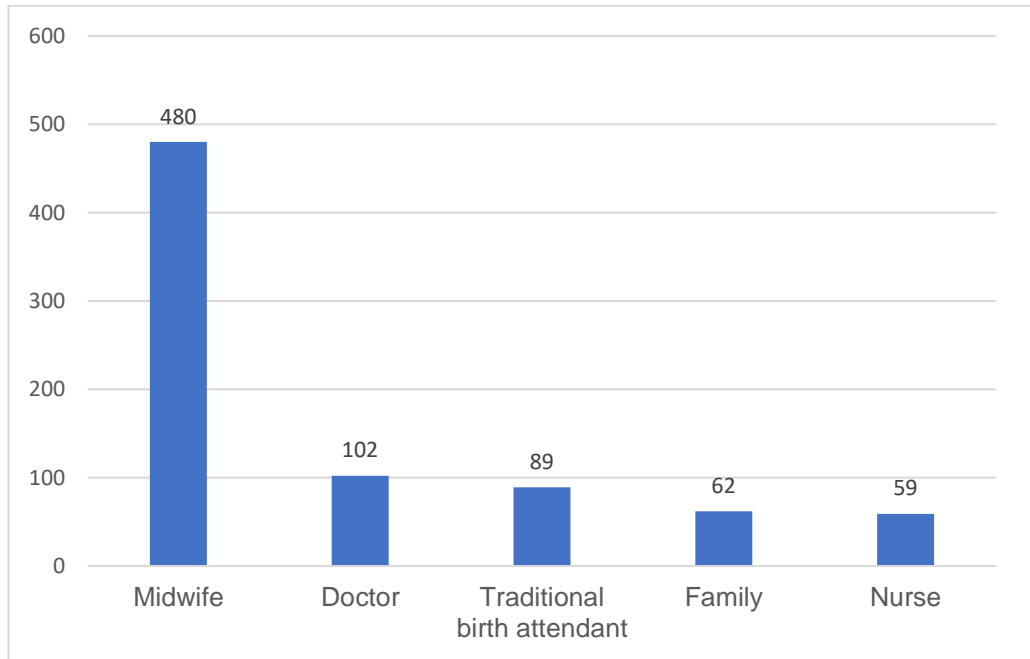
#### **4.4.4 Place of ANC and delivery for the previous pregnancy**

Four hundred and sixty-eight (64.1%) of the respondents made use of the ANC services at a government health centre, 150 (20.6%) at a government hospital, 86 (11.8%) at a health post, and 25 (3.4%) had ANC visits at a private hospital.

The majority of the pregnant women, 357 (45.1%), gave birth at a government health centre, 256 (32.3%) at a government hospital, 157 (19.8%) at home, and 22 (2.8%) at a private hospital. Pregnant women in this study who gave birth at a government health centre for their previous pregnancy were fewer than those reported in the study findings in Northern Ethiopia, where 47.6% of pregnant women gave birth in a government health centre (Oumer, Aragie & Worede 2022:12).

#### **4.4.5 Previous pregnancy birth attendants**

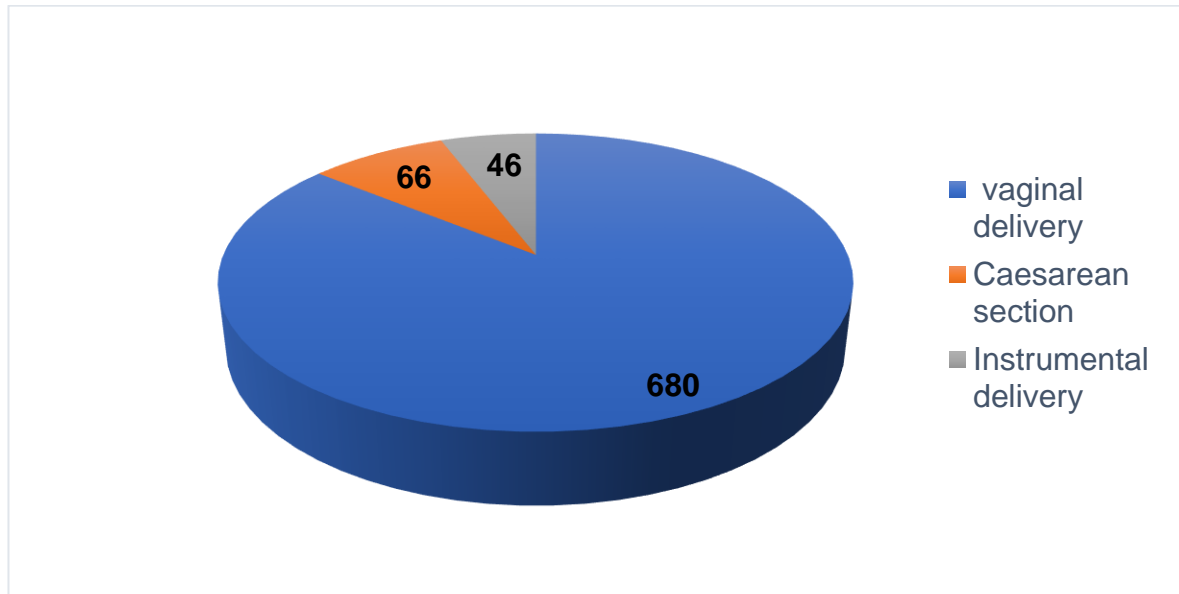
Of the 1014 pregnant women, 792 (78.1%) gave birth more than once; the majority, 480 (60.6%), were attended by a midwife, 102 (12.9%) by a doctor, 89 (11.2%) by traditional birth attendants, 62 (7.8%) by family members, and 59 (7.4%) were assisted by a nurse.



**Figure 4.2: Previous pregnancy birth attendants**

#### **4.4.6 Mode of delivery for pregnant women's previous birth**

The mode of delivery of the previous birth for 680 (85.8%) pregnant women was a spontaneous vaginal delivery, a caesarean section for 66 (8.3%), and an instrument-assisted delivery for 46 (5.6%).



**Figure 4.3: Pregnant women’s previous mode of giving birth, Arsi Zone, Oromia, 2022**

#### **4.4.7 Reason for pregnant women preferring home deliveries**

Among the reasons why pregnant women preferred to give birth at home, the majority, 67 (42.9%), were of the view that labour is simple at home; for 26 (16.6%), it was due to a lack of transportation and long distances to health institutions; and for 19 (12.2%), it was due to the availability of traditional birth attendants. Thirteen (8.3%) participants preferred to be managed by their family, and 10 (6.4%) delivered at home because they had a healthy pregnancy. However, eight (5.1%) women delivered at home because nobody accompanied them to the health facility; for seven (4.5%) participants, it was because there were no female health professionals to assist them during birth; and for six (3.4%) participants, their husbands did not agree to a health facility delivery. This finding is less than the research findings of North Ethiopia, where 33% of pregnant women gave birth at home (Teferi, Sebastian & Baroudi 2022:15).

#### **4.4.8 Reason for pregnant women preferring health facility delivery**

For the 318 (50%) pregnant women, they chose a health facility birth for their previous pregnancy due to the need to have better services; for 86 (15.5%), the

reason was that the health facility was close to them; for 84 (13.2%), the reason was to face the difficult labour; and for 57 (9%), the decision was made because of a previous bad outcome of home delivery. Fifty-six (8.8%) of the respondents preferred a health facility birth because they had previously experienced a better outcome from a health facility birth, and for 35 (5.5%), it was because a health professional advised them to give birth at the health facility. This study's findings were similar to those of research from Mandura District, Ethiopia, which revealed that the reasons pregnant women preferred to give birth in the health facility were that more than half (73.7%) of respondents wanted a better outcome for themselves and their newborn, but 13.6% of the pregnant women who referred to health facility delivery to get better service were less than this study's respondents (Mitike, Wasie & Beyene 2020:15). The reason for the variation might be due to the different awareness levels of the respondents about the benefits of institutional delivery.



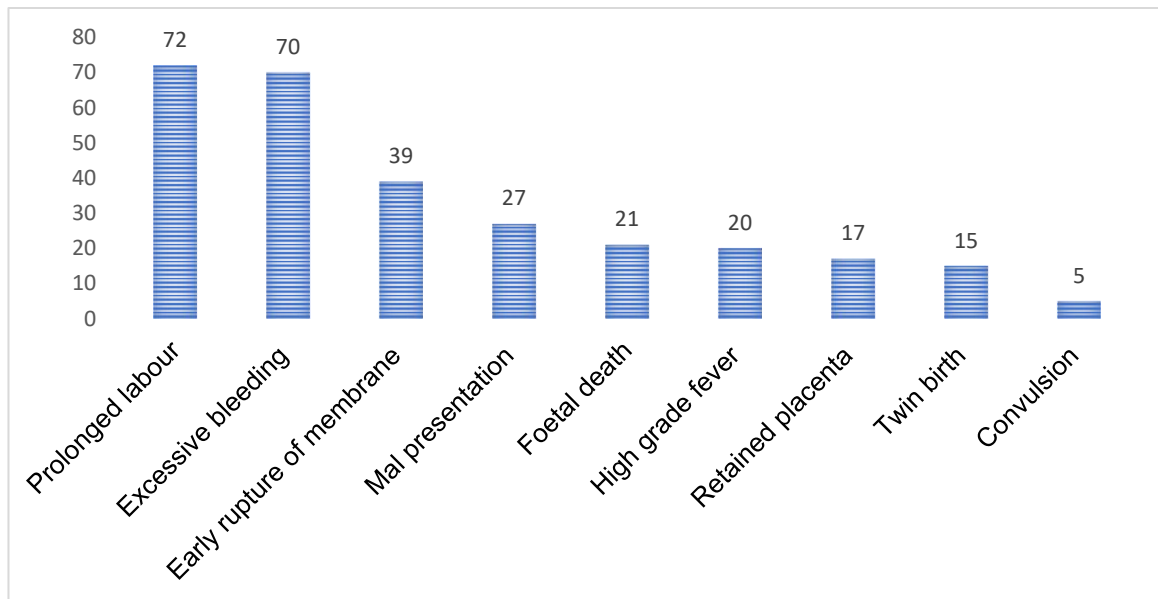
**Table 4.4: Previous pregnancy ANC visits, place of ANC, and place of birth among pregnant women Arsi Zone, Oromia, Ethiopia, 2022**

Variables		Frequency	Percentage
<b>Previous pregnancy N=1014</b>	Yes	792	78.1
	No	222	21.9
<b>ANC visits for previous pregnancy N=792</b>	Yes	729	92.1
	No	63	8
<b>Number of visits N=729</b>	First visit	62	8.5
	Second visits	149	20.4
	Third visits	348	47.7
	Fourth visits	170	23.3
<b>Place of ANC</b>	Gov't h/centre	468	45.1
	Gov't hospital	150	32.3
	Health post	86	11.8
	Private h/facility	25	3.4
<b>Place of gave birth N=792</b>	Gov't health centre	357	45.1
	Gov't hospital	256	32.3
	Home	157	19.8
	Private hospital	22	2.8

#### **4.4.9 Obstetric complications encountered during previous births**

Among the 792 (78.1%) pregnant women with a history of previous births, 239 (30.2%) had different obstetric complications. Seventy-two (30.1%) faced prolonged labour, 70 (29.3%) excessive vaginal bleeding, 39 (16.3%) early rupture of membranes, 27 (11.3%) mal-presentation, 21 (8.8%) foetal death, 20 (8.4%) high-grade fever, 15 (6.3%) twin births, 17 (7.1%) retained placentas, and five

(2.1%) had convulsion problems during their previous birth. This study's findings on pregnant women who faced different obstetric complications were two and a half times greater than the study findings from the Mizan-Aman town, Ethiopia, where approximately 12.12% of respondents encountered various obstetric problems during their pregnancy, childbirth, and the postpartum period (Wudu & Tsegaye 2021:13).



**Figure 4.4: Previous pregnancy encountered obstetrics complication Arsi Zone, Oromia, 2022**

#### **4.4.10 Referral to the higher health facility and problems encountered during referrals**

In resource-limited health facilities in Ethiopia, the referral system is a way of safeguarding the mother and newborn from adverse pregnancy outcomes. Among 239 (30.2%) pregnant women who had complicated labour during their previous birth, 99 (41.4%) were referred to higher health facilities for better management of complications, which was less than the research study in India. An observational study done in India revealed that 70.3% of the respondents were referred by the health centre to a higher hospital to get urgent treatment for an encountered obstetric complication that was beyond the treatment scope of the health centre (Jakhar & Choudhary 2019:8).

The acceptance and decision for referral of 55 (55.5%) pregnant women in labour were made by the husbands, 22 (22.2%) by both husbands and pregnant women, 14 (14.1%) by the families, and eight (8.1%) were made by pregnant women alone. The challenges that made it difficult to arrive on time to the referral places were for 53 (53.5%) pregnant women, a lack of transportation; for 16 (16.2%), a shortage of money; for 12 (12.1%), difficulty in identifying the referral places; and for 11 (11.1%), inaccessibility of roads to reach the referral places. The study conducted in Uganda showed that the main reason for the delay in referrals among women in obstetric emergencies was that 27% of the referred cases were delayed due to transportation inaccessibility (Kanyesigye, Ngonzi, Mulongo, Fojardo & Kabakyenga 2022:15). This finding was similar to this study, where the main reason for the referral delay was a transportation problem.

#### **4.4.11 People who accompanied the women to a health facility**

The qualitative study showed that during an obstetric emergency, companions provided emotional support, using praise and reassurance to help women feel in control and confident and provided a continuous physical presence (Bohren, Berger, Munthe-Kass & Tunçalp 2019:3). During the referral time, 85 (85.9%) of the pregnant women were accompanied by their husbands to the referral places during labour, 29 (29.3%) by relatives, 17 (17.1%) by a health worker, six (6.1%) by a mother-in-law, and two (2.1%) travelled alone to the referral higher health facilities. This study's findings are higher than a previous study conducted in Kenya, where 29.3% of the respondents' husbands and 13.13% of their sisters accompanied the women to provide support in different ways (Afulani, Kusi, Kirumbi & Walker 2018:150). This variation might be due to the differences in awareness between husbands living in Ethiopia and Kenya about the benefit of companionship, which appeared to help women have a more positive birth outcome.

#### **4.4.12 Mode of transportation during referral time**

The mode of transportation of pregnant women in labour during the referral time to the health facility were ambulances for 59 (59.6%), rentals for 27 (27.3%), five

(5.1%) travelled on foot, four (4%) travelled on horseback, and four (4%) travelled by cart. Regarding the utilisation of health facilities, the ambulances used by the respondents during referrals in this study were higher than those reported in the findings in Uganda. Fifteen percent of the respondents only utilised the health facility ambulances as a means of transportation during the referral time. The difference may be due to the geographical variation and infrastructure (Kanyesigye *et al* 2022:15).

#### 4.4.13 Time interval between arrival and treatment during referral

The time interval between the arrival and receiving treatment in referral health facilities was 56 (56.6%) at the time of arrival, 32 (32.3%) were treated after one hour, seven (7.1%) stayed more than three hours, and four (4%) waited for two hours without treatment.

**Table 4.5: Referral to the higher health facility and problems during referral of pregnant women, Arsi Zone, Ethiopia**

Variables		Frequency	Percentage
<b>Referral to higher health facility N=239</b>	Yes	99	41.4
	No	140	58.6
<b>Decisions made during the referral N= 99</b>	Husband	55	55.5
	Both husband and wife	22	22.2
	Family	14	14.1
	Pregnant women	8	8.1
<b>Problems during referral</b>	Lack of transportation	53	53.5
	Shortage of money	16	16.2
	Unable to identify a place of referral	12	12.1
	Inaccessibility of road	11	11.1
<b>Accompany during referral</b>	Husband	85	85.9

Variables		Frequency	Percentage
	Relative	29	29.3
	Health worker	17	17.1
	Mother-in-law	6	6.1
	Travel alone	2	2.1
<b>Mode of transportation</b>	Health Facility ambulance	59	59.6
	Rental car	27	27.3
	On foot	5	5.1
	On horseback	4	4
	By cart	4	4

#### **4.5 CURRENT PREGNANCY BIRTH PREPAREDNESS, COMPLICATION READINESS PRACTICE OF PREGNANT WOMEN**

##### **4.5.1 Antenatal care utilisation of the current pregnancy of the respondents**

The timing of ANC booking is one of the essential components of the ANC service that helps with the early detection, management, and prevention of obstetric problems to enable the mother to receive a complete ANC package service; however, a limited number of pregnant women are booking at the recommended time. (Alemu & Argaw 2018:15).

The majority of the pregnant women in this study, 425 (41.9%), started their first ANC visit at four to six months of pregnancy, 390 (38.5%) between one and three months, and 199 (19.6%) between seven and nine months of the gestational age for the current pregnancy ANC visit. The starting time for the first ANC visits in this study was similar to the study in Ethiopia, where 79.1% of the pregnant women started their first ANC visits at or after four months of their pregnancy (Haile, Wolde & Yohannes 2022:10).

Among all the study participants, 280 (27.6%) attended the ANC visit at the health facility once, 323 (31.9%) visited twice, 335 (33%) visited three times, and 76 (7.5%) attended ANC visits at a health facility four times.

Related to the ANC attendants during this pregnancy, the majority of pregnant women, 557 (54.9%), were assessed by a midwife, 222 (21.6%) were attended by a general practitioner, 182 (17.9) by a nurse, and 53 (5.2%) by the health officer at the time of ANC.

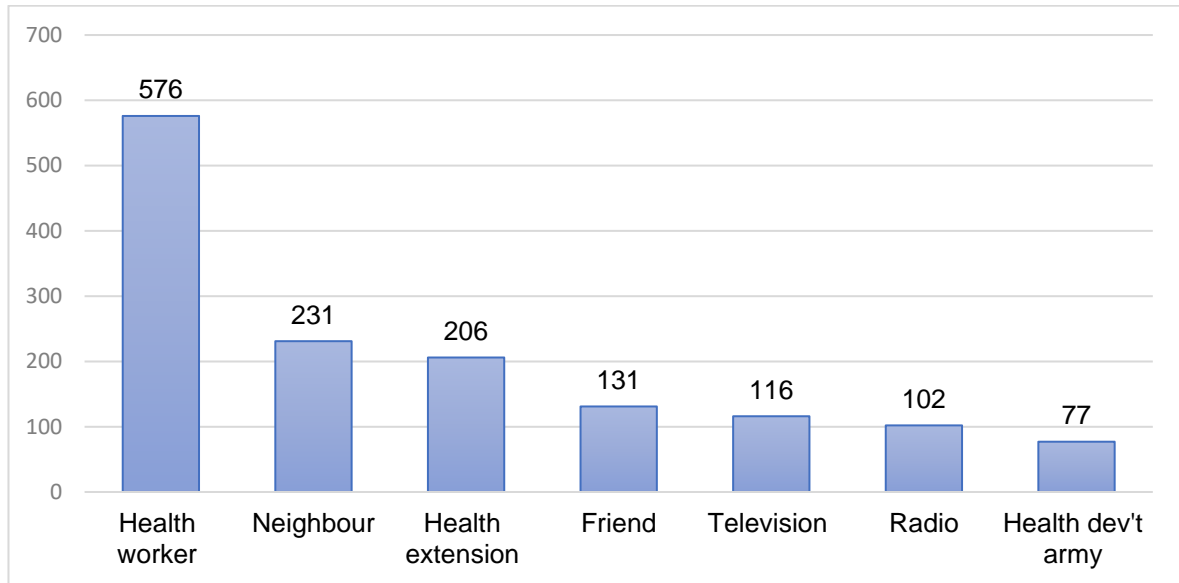
**Table 4.6: Antenatal care utilisation of pregnant women during the current pregnancy in the Arsi Zone, Oromia, Ethiopia, 2022**

<b>Variables N=1014</b>		<b>Frequency</b>	<b>Percentage</b>
<b>Month in which ANC was started for the current pregnancy</b>	1-3 months	390	38.5
	4-6 months	425	41.9
	7-9 months	199	19.6
<b>Number of ANC visits</b>	One visit	280	27.6
	Two visits	323	31.9
	Three visits	335	33
	Fourth visit	76	7.5
<b>ANC attendants by professional</b>	Doctor	222	21.9
	Midwife	557	54.9
	Nurse	182	17.9
	Health officer	53	5.2

#### **4.5.2 Awareness of the birth preparedness and complication readiness practice of pregnant women**

An awareness of birth preparedness and complication readiness practices is vital for minimising maternal and neonatal morbidity and mortality. In this study of 1014 pregnant women, 772 (76.1%) were aware of birth preparedness and complication readiness practices. The awareness of pregnant women regarding birth preparedness and complication readiness practices was similar to the study conducted in central Ethiopia, where 76.8% of the pregnant women were aware of BPCR (Girma, Walelign & Dejene, 2022:17), which was higher than the study in North-West Ethiopia, 23% of pregnant women were aware of BPCR, this significant variation might be due to the time variation and the awareness creation difference (Bitew, Awoke & Chekol 2016:8).

Identifying the sources of information about BPCR for pregnant women helps to plan a strategy to create an awareness of pertinent details about BPCR for these pregnant women who did not access the information. When asked where they got information on birth preparedness, most of the pregnant women, 576 (74.6%), said they got it from health workers, 231 (30%) from their neighbours, 206 (26.7%) from health extension workers, 131 (12.9%) from their friends, 116 (15%) from television, 102 (13.2%) from radio, and 77 (10%) from the health development army. A research study in the Netherlands revealed that the majority of pregnant women, 96.4%, got information from health professionals during pregnancy, particularly midwives (Vogels-Broeke, Daemers, Bude, De Vries & Nieuwenhuijze 2022:22). The finding was in line with this study since the majority of pregnant women who received information about obstetric services, including BPCR, got it from midwives.



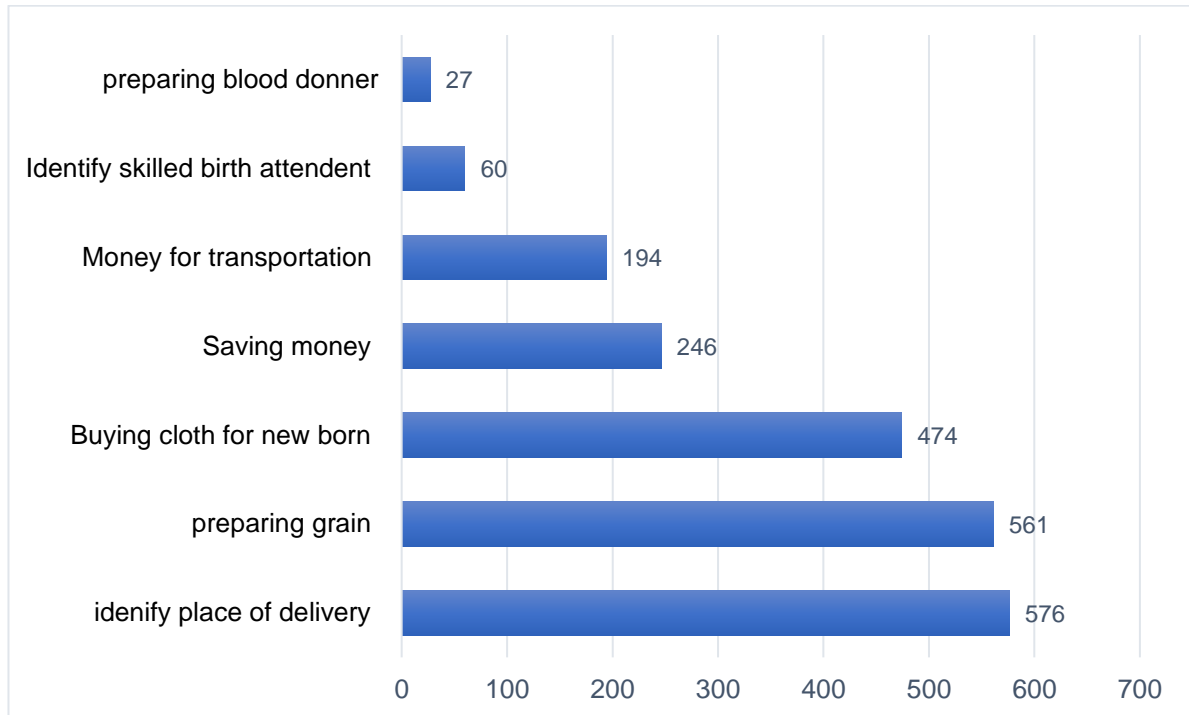
**Figure 4.5: Sources of information for awareness of birth preparedness**

#### **4.5.3 Aspect of birth preparedness of which pregnant women were aware**

The majority of the respondents, 572 (56.4%), indicated that they should identify the place of delivery. In comparison, 561 (55.3%) said that they should prepare grain and other food items for consumption during childbirth, 474 (46.7%) identified buying clothes for the newborn, 246 (24.3%) mentioned being familiar with saving money for emergencies they could encounter, 194 (19.1%) indicated preparing money for transportation, 61 (6%) should identify skilled birth attendants, 27 (12%) mentioned organising a blood donor to donate blood in case they may have severe bleeding during the delivery. The percentage of women who identified a place for delivery was higher (56.4%) than the 30.5% found in the Gana study, but the correlated result observed in both studies was that most of the pregnant women, 74.8%, bought clothes for their newborns (Saaka & Alhassan 2021:11).

These results were less than those of a study conducted in Ethiopia, where 71.2% of the respondents identified the place of birth, and 79.4% mentioned saving money to use during emergencies (Zinie & Shikur 2020:3).





**Figure 4.6: Aspects of birth preparedness that pregnant women were aware of in the Arsi Zone, Oromia, 2022**

#### **4.5.4 Pregnant women’s birth preparedness practices and complication readiness for the current pregnancy**

Seven hundred and fifty (74%) respondents reported receiving advice from health professionals about birth preparedness. Nine hundred and twenty-three (91.1%) agreed on the importance of birth preparedness to save the lives of mothers and newborns. Of 1014 respondents in this research study, 869 (85.7%) mentioned that they had prepared to prevent birth complications by planning and applying the different mechanisms of action of birth preparedness and complication readiness practices. The percentage of pregnant women who received information from health workers in this research (74%) is lower than 97.1% in a study conducted in Bench Maji, Ethiopia (Gudeta & Regassa 2019:5).

The majority of pregnant women, 678 (78%), prepared food items, and 550 (63.3%) bought clothes for their newborns. Concerning the mandatory components of birth preparedness and complication readiness practices, 634 (62.5%) spontaneously mentioned the place where they planned to give birth, 330 (38.9) prepared to save

money for emergencies, 156 (18%) planned to identify the skilled birth attendants, 139 (16%) had identified the means of transportation to use during birth, and 41 (4.7%) reported that they had planned for blood donors in case blood may be needed. These percentages are higher than those in the research study conducted in Mizan-Aman, Ethiopia, where 53% of pregnant women identified the place of delivery, and 16.7% only saved money to use for obstetric emergencies (Wudu & Tsegaye 2021:13).

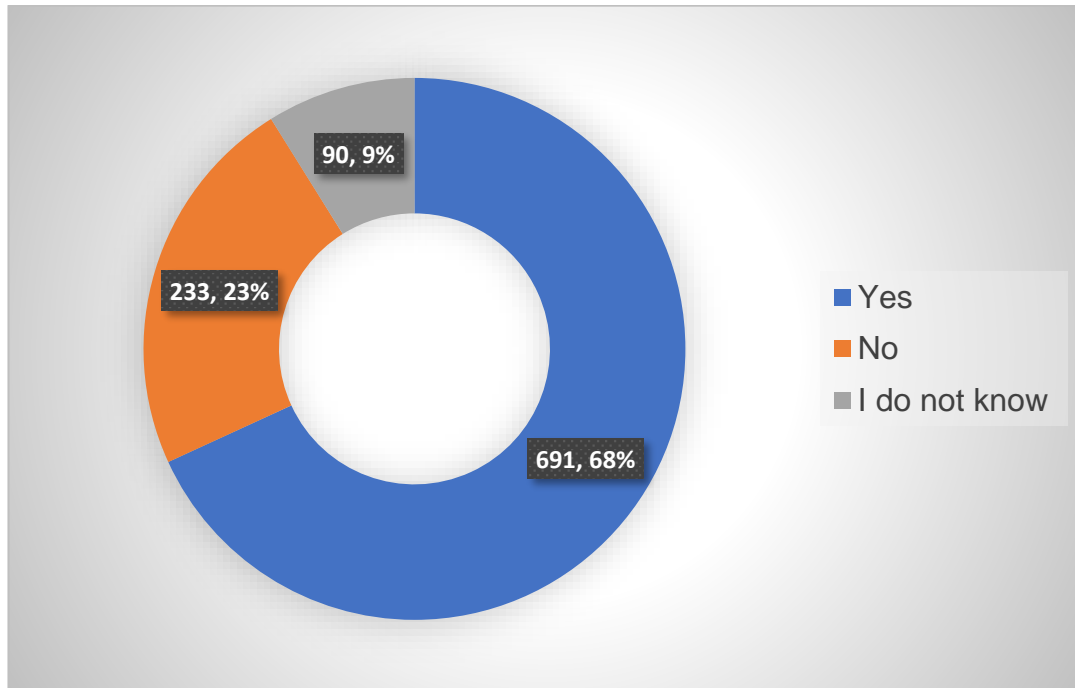
Planning the birthplace is one strategy to tackle birth complications. The majority of pregnant women in this research, 957 (94.4%), planned their birthplace. In this regard, 586 (57.6%) reported giving birth at the government health centre, 331 (32.6%) at a government hospital, 26 (2.6%) at home, and 14 (1.4%) at a private hospital.

**Table 4.7: Practices regarding the birth preparedness of pregnant women attending ANC clinics in the Arsi Zone, Oromia, Ethiopia**

Variables		Frequency	Percentage
Advised about BPCR by health professionals		750	74
Agreed on the importance of BPCR		923	91.1
BPCR for current pregnancy		869	85.7
Planned activities of BPCR	Preparing food items	678	78
	Clothes for newborns	550	63.3
	Plan the birthplace	634	72.9
	Saving money	330	38.7
Multiple answers are possible	Identify skilled birth attendant	156	18
	Means of transportation	139	16
	Blood donors	41	4.7

#### **4.6 AWARENESS OF KEY DANGER SIGNS AMONG PREGNANT WOMEN ATTENDING ANC CLINICS**

Pregnant women were asked about unforeseen danger signs that could harm women during pregnancy, labour, delivery, and the postpartum period. Most of the pregnant women, 691 (68.1%), were aware of the unforeseen danger signs that could harm women during pregnancy, labour, delivery and postpartum; 233 (23%) did not know about any unforeseen danger signs that could harm women during pregnancy, labour, delivery, and postpartum, and 90 (8.9%) mentioned no danger signs that could harm women during pregnancy, labour delivery, and the postpartum period. The overall awareness of pregnant women about the danger signs during pregnancy, labour, delivery, and the postpartum period was slightly less than the study findings in a study in North-West Ethiopia, where 74.4% of pregnant women knew the danger signs (Asferie & Goshu 2022:10).



**Figure 4.7: Awareness of key danger signs among pregnant women in the Arsi Zone, Oromia, 2022**

#### **4.6.1 Sources of information for key danger signs during pregnancy, labour delivery and the postpartum period**

The majority of pregnant women, 444 (43.8%), received information from health workers, 143 (14.1%) from health extension workers, 142 (14%) from friends, 68 (16.7%) from television, 63 (6.2%) from community health workers, 50 (4.9%) from the radio, and 30 (3%) by reading books. These findings are lower than those of the study in Cameroon, where 89% of the respondents received information about the danger signs of pregnancy from health workers (Liang *et al* 2019:19).

**Table 4.8: Sources of information on the key danger signs among pregnant women attending ANC clinics in the Arsi Zone, Oromia, Ethiopia, 2022**

Variables		Frequency	Percentage
Sources of Information (multiple answers is possible)	Health workers	444	43.8
	Health extension worker	143	14.1
	Friend	142	14
	Television	68	16.7
	Community health worker	63	6.2
	Radio	50	4.9
	Reading book	30	3

#### **4.6.2 Awareness of key danger signs during pregnancy**

More than half of the pregnant women, 544 (53.6%), mentioned vaginal bleeding, 138 (13.6%) mentioned swollen hands and feet, 108 (10.7%) mentioned reduced or stopped foetal heartbeat, 107 (10.6%) mentioned water breaks, 119 (11.7%) mentioned severe headaches, and 85 (8.4%) mentioned blurred vision as a key danger sign during pregnancy. A similar study in India revealed that most (71.4%) respondents mentioned vaginal bleeding as the most significant danger sign (Kari & Angolkar 2021:9).

#### **4.6.3 Awareness of key danger signs during labour**

The majority of the pregnant women, 723 (71.2%), reported being aware of the key danger signs during labour. Of those who had an awareness, 420 (41.4%), 351 (34.6%), 246 (24.3%), 102 (10.1%), and 40 (3.9%) of the participants spontaneously mentioned vaginal bleeding, prolonged labour, retained placenta, severe headache, and convulsions as a key danger sign during labour.

#### 4.6.4 Awareness of key danger signs during the first two days after birth

Overall, 603 (59.5%) of the pregnant women knew the danger signs during the first two days of the postpartum period. The pregnant women's responses assessed the six danger signs during the first two days postpartum. The most frequently mentioned danger sign, namely vaginal bleeding, was mentioned by 432 (42.6%) pregnant women. In comparison, 144 (14.2%) indicated high fever, 121 (11.9%) mentioned severe headache, 109 (10.72%) mentioned malodorous vaginal discharge, 50 (4.9%) mentioned blurring vision, and 48 (4.7%) mentioned convulsions.

The danger signs of pregnancy are warning signs that alarm pregnant women and alert them to the need for urgent care. The research findings in this study on the awareness of detecting danger signs of labour and the postpartum period are higher than the study findings in central Ethiopia, where 35.2% of the respondents knew of the danger signs that occurred during labour and 53.8% knew about those that occur during the postpartum period (Girma, Walelign & Dejene 2021:17).

**Table 4.9: Awareness of key danger signs regarding birth preparedness during pregnancy, labour, and the first two days after birth among pregnant women in Arsi Zone, Oromia, Ethiopia, January 2022**

Variables N=1014			Frequency	Percentage
Danger signs during pregnancy	Severe vaginal bleeding	Yes	544	53.6
		No	470	46.4
	Swollen hands and feet	Yes	138	13.6
		No	876	86.4
	Blurred vision	Yes	85	4.8
		No	929	91.6
	Reduced foetal heart rate or stopped	Yes	108	10.7
		No	906	89.3

Variables N=1014			Frequency	Percentage
	Water break	Yes	107	10.6
		No	907	89.4
	Severe headache	Yes	119	11.7
		No	895	88.3
<b>Danger sign during labour and delivery</b>	Severe vaginal bleeding	Yes	420	41.4
		No	594	58.6
	Prolonged labour	Yes	351	34.6
		No	662	65.3
	Convulsion	Yes	40	3.9
		No	974	96.1
	Retained placenta	Yes	246	24.3
		No	768	75.5
	Severe headache	Yes	102	10.1
		No	912	89.9
<b>Danger signs during the first 2 days of birth</b>	Severe vaginal bleeding	Yes	432	42.6
		No	582	57.4
	High fever	Yes	144	14.2
		No	870	85.6
	Malodorous vaginal discharge	Yes	109	10.7
		No	905	89.3
	Blurred vision	Yes	50	4.9
		No	964	95.1
	Severe headache	Yes	121	11.9
		No	893	88.1

Variables N=1014			Frequency	Percentage
	Convulsion	Yes	48	4.7
		No	966	95.3

#### **4.7 FACTORS ASSOCIATED WITH THE BIRTH PREPAREDNESS AND COMPLICATION READINESS PRACTICE**

The association between the dependent and independent variables was determined by using a logistic regression model. The variables with a P-value  $\leq 0.2$  in the bivariate analysis were entered into a multiple logistic regression model to control confounding. The odds ratio with a 95% confidence interval was used to show associations. A P-value of  $< 0.05$  was considered statistically significant in the multivariate analysis.

##### **4.7.1 Sociodemographic factors influencing BPCR**

In a bivariate analysis, among the factors that affect the birth preparedness and complication readiness practice from sociodemographic variables, pregnant women at first pregnancy were 1.6 times more likely to prepare for birth and complication readiness than other age groups (COR=1.55; 95% CI: 1.02–2.17). Pregnant women who had their own mobile phone were 2.74 times more likely to prepare for birth and its complications than those who did not own a mobile phone (COR=2.74; 95% CI: 1.87–4.09).

The pregnant women who resided in urban areas were 1.5 times more likely to prepare for birth and its complications than those who resided in rural areas (COR=1.488; 95% CI: 1.05–2.12). The pregnant women who were supported by their husbands throughout their pregnancy were three times more likely to plan for birth preparedness and complication readiness than their counterparts (COR=3.02; 95% CI: 2.04–5.02). The pregnant women assisted with household activities and other issues by their relatives were 1.93 times more likely to prepare for birth preparedness and its complications (COR=1.93; 95% CI: 1.35–2.75).



Pregnant women's husbands who could read and write and had a primary, secondary, college, and above education were associated with helping in preparing for birth and preventing its complications. Husbands able to read and write (COR=2.35; 95% CI: 1.09,5.09), primary education (COR=2.7: 95% CI: 1.14,6.27), secondary education (COR=2.33; 95% CI: 1.24,4.36), college and above (COR=2.41; 95% CI: 1.51, 4.62) were more likely to prepare for birth preparedness and its complication than the pregnant women having non educated husbands.

**Table 4.10: Sociodemographic factors associated with BPCR among pregnant women attending ANC clinic in Arsi Zone, Ethiopia, 2022 (N=1014)**

Variables	BPCR practice		COR	95% CI
	Yes n (%)	No n (%)		
<b>Age at first pregnancy</b>				
14-19	329(82.9)	68(17.1)	1.00	
20-25	435(87.9)	60(12.1)	1.495	<b>1.03,2.18*</b>
26-31	97(86.6)	15(13.4)	1.34	0.73,2.18
32-36	2(20)	8(80)	0.827	0.17,3.98
<b>Owned mobile phone</b>				
Yes	718(88.6)	92(11.4)	2.74	<b>1.87,4.09*</b>
No	151(74)	53(26)	1.00	
<b>Residence</b>				
Urban	534(87.7)	75(12.3)	1.49	<b>1.05,2.12*</b>
Rural	335(82.7)	70 (17.3)	1.00	
<b>Husband support</b>				
Yes	793(87.7)	111(12.3)	3.26	<b>2.037,5.02*</b>
No	76(69.1)	34(30.9)	1.00	

Variables	BPCR practice		COR	95% CI
	Yes n (%)	No n (%)		
<b>Relative support</b>				
Yes	513(89.2)	62(10.8)	1.93	<b>1.35,2.75*</b>
No	356(81.1)	83(18.9)	1.00	
<b>Husband education</b>				
Cannot read and write	79(87.8)	11(12.2)	1.00	
Read and write	108(86.4)	17(13.6)	2.35	<b>1.09,5.09*</b>
Primary education	432(88.2)	69(13.3%)	2.67	<b>1.14,6.27*</b>
Secondary education	207(86.6)	32(13.4)	2.33	<b>1.24,4.36*</b>
College and above	43(72.9)	16(27.1)	2.41	<b>1.51,4.62*</b>

**\*= significant association**

#### **4.7.2 BPCR factors associated with service utilisation and awareness of obstetric danger signs**

A bivariate logistic regression analysis found that pregnant women who travelled 30 to 60 minutes from home to health institutions were 1.6 times more likely to plan birth preparedness (COR=1.61; 95% CI: 1.03,2.59). Decision-making by both husband and wife to seek obstetric services was two times more likely to influence pregnant women to utilise the services than if decisions were made by a woman or by a husband alone (COR=2.12: 95% CI: 1.35,3.34).

Pregnant women who had ANC visits for the previous pregnancy were more likely six times to prepare for birth than if they did not have ANC visits (COR=6.7; 95% CI: 3.84,11.76). Pregnant women with five to ten pregnancies were 2.6 times more likely to plan birth preparedness than their counterparts (COR=2.6; 95% CI: 1.50, 4.61).

The pregnant women who agreed to the importance of birth preparedness and preventing its complications were 11.9 times more likely to plan birth preparedness

than those who did not agree (COR=11.9; 95% CI: 7.46,27.21). Pregnant women who were aware of birth preparedness were 4.7 times more prepared for birth preparedness than their counterparts (COR=4.7; 95% CI: 3.25, 6.78).

The pregnant women who were aware of danger signs during pregnancy were 4.4 times more likely to be prepared for birth than those who did not have an awareness (COR=4.4; 95% CI: 3.02,6.32). The pregnant women who were aware of the danger signs during labour and giving birth were 2.8 times more likely to plan for birth preparedness than their counterparts (COR=2.8; 95% CI: 1.97,4.05).

The pregnant women who had danger signs during two days of the postpartum period were 2.9 times more prepared for the birth and its complications than their counterparts (COR=2.9; 95% CI: 2.01, 4.16). Obstetric and health service utilisation factors associated with birth preparedness and prevention of its complications are highlighted in Table 4.11.

**Table 4.11: BPCR factors associated with obstetric service utilisation and detecting obstetrics danger signs**

Variables	BPCR		COR	95 % CI
	Yes n (%)	No n (%)		
<b>Time home to HI</b>				
<15 minute	147(85.5)	25(14.5)	1.00	
15 to 30 minutes	396(87.4)	57(12.6)	1.36	0.77,2.42
30to 60 minute	188(85.8)	31(14.2)	1.61	<b>1.03,2.59*</b>
>1hrs	138(81.2)	32(18.8)	1.4	0.82,2.42
<b>Decision to utilise OB service</b>				
Self	126(79.7)	32(20.3)	1.00	
Husband	100(73.5)	36(26.5)	0.71	0.41,1.22
Husband and wife	643(89.3)	77(10.7)	2.12	<b>1.35,3.34*</b>

Variables	BPCR		COR	95 % CI
	Yes n (%)	No n (%)		
<b>ANC for previous pregnancy</b>				
Yes	660(90.5)	69(9.5)	6.72	<b>3.84,11.76*</b>
No	37(58.7)	26(41.3)	1.00	
<b>Plan place to give birth currently</b>				
Yes	853(89.1)	104(10.9)	21.02	<b>11.39,38.78*</b>
No	16(28.1)	41(71.9)	1.00	
<b>Awareness of BPCR</b>				
Yes	703(91.1)	69(8.9)	4.69	<b>3.25,6.78*</b>
No	165(68.5)	76(31.5)	1.00	
<b>Number of pregnancies</b>				
1	174(78.4)	48(21.6)	1.00	1.21,2.69
2-4	504(86.7)	77(13.3)	1.81	
5-10	191(90.5)	20(9.5)	2.63	
<b>Belief importance of BPCR</b>				
Yes	830(89.9)	93(10.1)	11.9	<b>7.46,18.98*</b>
No	39(42.9)	52(57.1)	1.00	
<b>Got BPCR advice from a health worker</b>				
Yes	719 (95.9)	31 (4.1)	17.6	<b>11.42, 27.21*</b>
No	150 (56.8)	114 (43.2)	1.00	

Variables	BPCR		COR	95 % CI
	Yes n (%)	No n (%)		
<b>Unforeseen danger signs can harm during obstetric time</b>	625(90.4)	66(9.6)	3.44	<b>2.02,5.06*</b>
Yes	66(73.3)	24(26.7)	1.00	
No	178(76.4)	55(23.6)	1.2	0.68,2.05
I do not know				
<b>Awareness of danger signs during pregnancy</b>	622(92.1)	53(7.9)	2.8	<b>1.97,4.05*</b>
Yes	247(72.9)	92(29.1)	1.00	
No				
<b>Awareness of danger signs during labour and birth</b>	649(89.8)	74(10.2)	4.4	<b>3.02,6.32*</b>
Yes	220(75.6)	71(24.4)	1.00	
No				
<b>Awareness of danger signs during 2 days of postpartum</b>	549(91)	54(9)	2.9	<b>2.01,4.16*</b>
Yes	320(71.9)	91(22.1)	1.00	
No				

#### 4.7.3 Multivariate logistic regression analysis of factors affecting birth preparedness and complication readiness practice adjusted for confounding variables

After the confounding factors were adjusted by applying multiple logistic regression, among the sociodemographic variables, the 20 to 25 years age of age at first marriage, having their own mobile phone, being an urban resident, pregnant women who got support from their husbands, and those who were assisted with

household activities and other issues by their relatives were significantly associated with birth preparedness and complication readiness practices.

From the variables that were used to assess the awareness of the birth preparedness and complication readiness practice of pregnant women, those having an awareness of birth preparedness, the pregnant women believed the importance of birth preparedness during the obstetric period, the pregnant women were able to identify the danger signs of obstetric complications, and pregnant women received professional health advice about the benefit of BPCR, were statically significant.

Among the variables assessed for the utilisation of obstetric services, the pregnant women had had an ANC visit for a previous pregnancy, the number of ANC visits attended by pregnant women and the pregnant women planned for the place to give birth were significantly associated with the BPCR of pregnant women with a p-value of <0.05.

These pregnant women aged 20 to 25 years at their first pregnancy were about 1.7 times more likely to prepare for birth and its complications than other age groups of the first pregnancy (AOR=1.7; 95% CI: 1.01–2.97). Those pregnant women who resided in urban areas were 2.1 times more likely to prepare for birth and its complications than those who resided in rural areas (AOR=2.1; 95% CI: 1.28–3.25). This study is in line with the study on Ethiopia women with urban residents that found that they were two times more likely to be prepared for birth and its complications than pregnant women living in rural areas (Gudeta & Regasa, 2019:29). This result indicated that the place of residence of pregnant women is a definitive factor contributing to utilising maternal health services in Ethiopia.

The likelihood of planning birth preparedness and complication readiness practice for pregnant women with mobile phones was (AOR=2.0; 95% CI: 1.29–3.25) times higher than for pregnant women without mobile phones. The likelihood of having a birth preparedness and complication readiness practice among pregnant women who were supported by their husbands during pregnancy (AOR=2.2; 95% CI: 1.23–3.80) was times higher than those pregnant women who were not supported by

their husbands. Similar research study findings on partner support were reported by Asefa, Getachew, Belete and Molla (2022:11), who described that pregnant women who received support from their husbands were twice as likely to plan for birth preparedness than the women who did not get support from their partners. The reason might be that husbands control Ethiopian household resources; therefore, when the husband permits the women to utilise maternal health services, the women can utilise obstetric services. The likelihood of having a birth preparedness and complication readiness practice of pregnant women whose relatives assisted in household activities was (AOR=1.6; 95 CI: 1.08–2.34) times higher compared with pregnant women who did not get assisted by their relatives.

The likelihood of having birth preparedness and complication readiness practices among pregnant women with awareness of BPCRPs was estimated to be 2.8 (AOR=2.8; 95% CI: 1.36–5.70) times greater than their counterparts. This finding is similar to the study conducted in central Ethiopia by Girma, Walelign and Dejene (2021:17), which indicated that pregnant women who knew BPCRPs were more than two times more likely than their counterparts to plan for birth preparedness. The probability of having birth preparedness and complication readiness practice among the pregnant women who planned the place where they were giving birth for their current pregnancy was (AOR=14.3; 95% CI: 6.54–31.07) higher than these pregnant women who did not plan where they would give birth for their current pregnancy.

Pregnant women receiving advice from health professionals towards birth preparedness and preventing complications significantly increased the likelihood of birth preparedness (AOR=10.4; 95% CI: 6.16–17.60). The pregnant women who could identify the unforeseen danger signs that could harm them during the obstetrics period increased the likelihood of birth preparedness significantly (AOR=2.4; 95% CI: 1.052–5.43). The pregnant women who had an awareness of the key danger signs that could occur during pregnancy were 3.3 times more likely to plan birth preparedness and complication readiness action compared with the pregnant women who had no awareness of key danger signs (AOR=3.3; 95% CI: 2.10–5.17). This study's results were greater than the study in Ethiopia, where

pregnant women who were knowledgeable about the key danger signs during pregnancy were two times more likely prepared than those who were not knowledgeable (Gudeta & Regassa, 2019:29). The variation might be due to an inability to get sustainable source information about birth preparedness.

The pregnant women who were aware of the key danger signs that could occur during the first two days of the postpartum period were 1.7 times more likely to plan birth preparedness and complication readiness actions than their counterparts (AOR=1.7;95% CI: 1.08–2.56) (see Table 4.12). A similar study conducted in Ethiopia revealed that pregnant women who had an awareness of danger signs that could occur during the postpartum period were four times more likely to plan BPCR than those who did not have an awareness (Wudu & Tesfaye, 2021:13). This finding was larger than our study's findings; it could have been due to different geographical locations and sources of information.

**Table 4.12: Associated factors in multivariate analysis adjusted for the confounding variables of BPCR of pregnant women attending the ANC clinic in the Arsi Zone, Ethiopia, 2022**

Variables	BPCR practices		COR (95%CI)	AOR (95%CI)
	Yes n (%)	No n (%)		
<b>Age at first pregnancy</b>			1.00	1.00
14-19	329(82.9)	68(17.1)	<b>1.49(1.03,2.18)</b>	<b>1.7(1.01-2.97) *</b>
20-25	435(87.9)	60(12.1)	*	
26-31	97(86.6)	15(13.4)	1.34(0.73,2.18)	1.75(0.78-3.95)
32-36	2(20)	8(80)	0.83 (0.17,3.98)	0.98(0.15-6.44)



Variables	BPCR practices		COR (95%CI)	AOR (95%CI)
	Yes n (%)	No n (%)		
<b>Owned Mobile phone</b>				
Yes	718(88.6)	92(11.4)	<b>2.7(1.87-4.09) *</b>	<b>2.0(1.29-3.25) *</b>
No	151(74)	53(26)	1.00	1.00
<b>Residence</b>				
Urban	534(87.7)	75(12.3)	<b>1.5(1.05-2.12) *</b>	<b>2.1(1.28-3.25) *</b>
Rural	335(82.7)	70(17.3)	1.00	1.00
<b>Husband support</b>				
Yes	793(87.7)	111(12.3)	<b>3.3(2.04-6.02) *</b>	<b>2.2(1.23-3.80) *</b>
No	76(69.1)	34(30.9)	1.00	1.00
<b>Relative support</b>				
Yes	513(89.2)	62(10.8)	<b>1.93(1.35-2.75) *</b>	<b>1.6(1.08-2.34) *</b>
No	356(81.1)	83(18.9)	1.00	1.00
<b>Plan place to give birth</b>				
Yes	853(89.1)	104(10.9)	<b>21.0(11.39-38.78) *</b>	<b>14.3(6.54-31.07)*</b>
No	16(28.1)	41(71.9)	1.00	1.00

Variables	BPCR practices		COR (95%CI)	AOR (95%CI)
	Yes n (%)	No n (%)		
<b>Awareness of BPCR</b>				
Yes	703(91.1)	69(8.9)	<b>4.7(3.25-6.78) *</b>	<b>2.8(1.36-5.70) *</b>
No	165(68.5)	76(31.5)	1.00	1.00
<b>Got BPCR advice from a health worker</b>				
Yes	719(95.9)	31(4.1)	<b>17.6(11.42-27.21) *</b>	<b>10.4(6.16-17.6) *</b>
No	150(56.8)	114(43.2)	1.00	1.00
<b>Unforeseen danger signs can harm during obstetric time</b>				
Yes	625(90.4)	66(9.6)	<b>3.4(2.02-5.06) *</b>	<b>2.4(1.052-5.43) *</b>
No	66(73.3)	24(26.7)	1.00	1.00
I do not know	178(76.4)	55(23.6)	1,2(0.68-2.05)	1.44(0.82-2.53)
<b>Awareness of danger signs during pregnancy</b>				
Yes	622(92.1)	53(7.9)	<b>2.8(1.97-4.05) *</b>	<b>3.3(2.10-5.17) *</b>
No	247(72.9)	92(29.1)	1.00	1.00
<b>Awareness of danger signs 2 days of postpartum</b>				
Yes	549(91)	54(9)	<b>2.9(2.01-4.16) *</b>	<b>1.7(1.08-2.56) *</b>
No	320(71.9)	91(22.1)	1.00	1.00

## **4.8 CONCLUSION**

The quantitative parts of this study were designed to assess the level of BPCR and determinant factors that influence pregnant women to utilise BPCR practice. The study findings concerning the sociodemographic characteristics of pregnant women were presented in detail to show the status of the study respondents. In addition, the obstetric history of pregnant women was also discussed to show the overall view of pregnant women in relation to obstetric-related factors and their awareness of BPCR. Furthermore, the birth preparedness practices of pregnant women were discussed, identifying the ability of pregnant women to detect the danger signs of pregnancy and the determinant factors that affect or promote pregnant women's utilisation of a BPCR practice to answer the research objective. Chapter 5 presents the results and discussion of the qualitative parts of the study to explore the perceptions of pregnant women regarding BPCR.

## **CHAPTER 5: PRESENTATION AND DISCUSSION OF QUALITATIVE DATA**

### **5.1 INTRODUCTION**

In Chapter 4, the quantitative study presented the results of birth preparedness and factors that determine birth preparedness in pregnant women. This chapter presents the findings of FGDs with pregnant women and in-depth interviews with health professionals. Conducting a qualitative study in this research was helpful in exploring more information lacking in the quantitative part of this study. Collecting qualitative data gives the researcher an opportunity to identify people's perceptions and motivations to engage the whole community. At the same time, it is helpful for the strategic planning of the health service (Al-Kuwari *et al* 2021:14).

The FGDs produced information related to the obstetric complications that can occur during pregnancy, childbirth, and the postpartum period, alarming danger signs during the obstetric period and the causes for delays in accessing health facilities, and the kinds of support given to pregnant women by her family and community members. Further aspects discussed were the importance of attending an ANC service, the advantages of birth preparedness, what kinds of birth preparedness actions pregnant women take, the benefits of early birth preparedness, obstacles to practising birth preparedness, and suggested strategies to improve the practice of pregnant women. The in-depth interviews explored the health professionals' experiences of offering birth preparedness, the challenges encountered when rendering services, and suggested intervention strategies to improve the BPCR of pregnant women attending ANC services.

### **5.2 SOCIODEMOGRAPHIC CHARACTERISTICS OF FGD PARTICIPANTS**

#### **5.2.1 Age of FGD participants**

Thirty-six pregnant women participated in the FGD; the minimum age for participation was 16 years old, the maximum age was 36 years old, and the mean age was 25.5 years old. Most (18%%) of the pregnant women are between the ages of 26 and 30. These findings were in line with those in Northern Ethiopia,

where the majority (35.5%) of pregnant women were between the ages of 25 and 29 (Shiferaw & Modiba 2020:12).

### **5.2.2 Marital status of FGD participants**

The majority of pregnant women, 34 (94.4%), were married, while only two (5.6%) were single.

### **5.2.3 Residence of participants**

Nineteen participants (52.8%) lived in an urban area, and 17 (47.2%) lived in a rural area.

### **5.2.4 Religion of the participants**

Among the 36 participants, more than half, 19 (52.8%), were Orthodox, 15 (41.7%) were Muslims, and two (5.6%) were Protestants.

### **5.2.5 Educational status of pregnant women**

The majority of pregnant women, 23 (63.9%), had a primary education, seven (19.4%) had a secondary education, five (13.9%) had a college and above education, and one (2.8%) could not read or write.

### **5.2.6 Occupation of the participants**

Approximately 35 (97.2%) of the pregnant women were housewives, while one (2.8%) was a government employee.

**Table 5.1: Sociodemographic characteristics of the FGD participants, Arsi, Zone, Oromia, Ethiopia, 2022**

Variables		Frequency	Percentage
<b>Age</b> Mean age 25±5 SD	16-20	1	2.8%
	21-25	13	36.1%
	26-30	18	50%
	31-36	4	11.1%
<b>Marital status</b>	Married	34	94.4%
	Single	2	5.6%
<b>Residence</b>	Urban	19	52.8%
	Rural	17	47.2%
<b>Religion</b>	Orthodox	19	52.8%
	Muslim	15	41.7%
	Protestant	2	5.6%
<b>Educational status</b>	Primary	23	63.9%
	Secondary	7	19.4%
	College and above	5	13.9%
	Cannot read and write	1	2.8%
<b>Occupation</b>	Housewife	35	97.2
	Governmental employee	1	2.8%

The sociodemographic characteristics of participants in this study are similar to those of the MEDHS (Mini Ethiopian Demography and Health Survey); for instance, the largest age group in this study was in the 25 to 30-year category, which accounted for 50% of the participants. In contrast, in the MEDHS (2019:15), the largest age group (76.4%) was between 25 and 30. In this study, the majority of

the pregnant women (63.9%) had a primary education; at the same time, 81.4% of EDHS 2016 participants had a primary education.

### 5.3 HISTORY OF PREGNANCY

#### 5.3.1 Gravida (number of pregnancies) of pregnant women

The majority of pregnant women, 15 (41.7%), were pregnant for the first time, eight (22.2%) were pregnant for the second time, seven (19.4%) were pregnant for the fourth time, and one (2.8%) was pregnant for the sixth time.

#### 5.3.2 Para (number of children) of pregnant women

Sixteen (44.4%) pregnant women had no children or were pregnant for the first time, eight (22.2%) had one child, seven (19.4%) had three children, four (11.1%) had two children, and one (2.8%) had five children.

**Table 5.2: Pregnancy history of FGD participants in the Arsi Zone, Oromia, Ethiopia, 2022 (N= 36)**

Variables		Frequency	Percentage
<b>Gravida of pregnancy</b>	1	15	41.7%
	2	8	22.2%
	3	5	13.9%
	4	7	19.4%
	6	1	2.8%
<b>Parity of pregnant women</b>	0	16	44.4%
	1	8	22.2%
	2	4	11.1
	3	7	19.4
	5	1	2.8

## 5.4 SOCIODEMOGRAPHIC CHARACTERISTICS OF THE IN-DEPTH INTERVIEW PARTICIPANTS

### 5.4.1 Age of in-depth interview participants

The minimum age of the participants was 30 years, the maximum age was 45 years, and the mean age was 37.5 years.

### 5.4.2 Sex of the in-depth interview participants

The majority of the in-depth interview participants, seven (77.8%), were female, while two (22.2%) were male.

**Table 5.3: Age and sex of in-depth interview participants as health professionals Arsi, Oromia, Ethiopia, 2022.**

Variables		Frequency	Percentage
<b>Age</b> Mean age 37.5SD	30-35	4	44.4%
	36-40	3	33.4%
	41-45	2	22.2%
<b>Sex</b>	Male	2	22.2%
	Female	7	77.8%

### 5.4.3 Profession of in-depth interview participants

Concerning the profession of the participants, the majority, six (66.7%), were midwives, two (22.2%) were health officers, and one (11.1%) was a nurse by profession.

### 5.4.4 Responsibility of participants in the health facility

Four (44.4%) participants were ANC providers, three (33.3%) were MCH care coordinators, and two (22.2%) were health facility directors.



#### 5.4.5 Experience of health professionals who participated in the in-depth interviews

The minimum number of service years was nine, and the maximum was 25. The majority of the health professionals, seven (77.8%) had served for nine to 15 years, and the other two (22.2%) had served for 16 to 25 years.

**Table 5.4: Profession, responsibility, and service experience of health professionals who participated in the in-depth interviews in the Arsi Zone, Oromia, Ethiopia, 2022 (N=36)**

Variables		Frequency	Percentage
Profession	Midwives	6	66.7%
	Health officers	2	22.2%
	Nurses	1	11.1%
Responsibility	ANC providers	4	44.4%
	MCH co-ordinators	3	33.3%
	Facility directors	2	22.2%
Service experience	9-15 years	7	77.8%
	16-25 years	2	22.2%

#### 5.5 ANALYSIS OF DATA COLLECTED FROM FGDS AND IN-DEPTH INTERVIEW PARTICIPANTS

An inductive thematic analysis approach was used for the reduction and analysis strategy, which helps to code, categorise, and summarise the data to analyse the basic concepts found in the gathered data. A total of four themes were presented, three of which were derived from the data collected from the FGD conducted with pregnant women. The last theme was derived from the data collected from in-depth interviews conducted with health professionals, ANC providers, MCH service co-ordinators, and facility directors.

### 5.5.1 Analysis of the FGD participants pregnant women

Thirty-six pregnant women participated in the FGDs conducted at three health facilities, as well as nine in-depth interviews among nine health professionals in three health facilities. Four themes emerged, which incorporated the obstetric challenges encountered by pregnant women throughout their pregnancy, the utilisation of obstetric services by pregnant women, the birth preparedness of pregnant women, and suggested intervention strategies to improve the BPCR among pregnant women and health professionals.

**Table 5.5: Description of health facilities abbreviation used and number of participants**

S. No	Name of health facilities	Acronym	Facilities and participants' code
1	Asella Hospital	AH	A
2	Eteya Health Centre	EHC	B
3	Ogolcho Health Centre	OHC	C
6	Participant	P	1-12 for each health facility
7	Key informant in-depth interview	KII	1-3 for each health professional working in each facility

**Table 5.6: Themes and category of FGD and in-depth interview participants Arsi Zone, Oromia, Ethiopia, 2022**

Main themes	Category	Sub-category
1. Obstetric problems encountered by pregnant women throughout their pregnancy	Danger signs encountered during the pregnancy Danger signs encountered during childbirth Danger signs during the first two days of the postpartum period	

Main themes	Category	Sub-category
2. Obstetric services utilisation by pregnant women	<p>Perception of pregnant women on ANC service</p> <p>Experience of pregnant women in the community using ANC service</p> <p>Level of pregnant women attending ANC service in the community</p> <p>Preferred place of giving birth for pregnant women</p> <p>Accessibility of referral service during the problems encountered</p> <p>Major barriers that hinder pregnant women from not attending ANC services</p>	<p>Reason to give birth at home</p> <p>Reason to give birth at the health facility</p> <p>Decision-making during referral</p> <p>Challenges during referral time</p>
3. Birth preparedness of pregnant women	<p>Advantages of birth preparedness</p> <p>Kinds of birth preparedness</p> <p>Support and care at the family, husband, relative, and community level</p> <p>Challenges and barriers to pregnant women to plan birth preparedness</p> <p>Challenges health professionals faced in implementing birth preparedness</p>	<p>Husband support</p> <p>Relative support</p> <p>Community support</p> <p>Challenges to pregnant women from health professionals</p> <p>Challenges to pregnant women in the community</p>

Main themes	Category	Sub-category
4. Suggested strategies to address the BPCR among pregnant women	Suggested strategies to address BPCR among pregnant women  Suggested intervention strategies to address BPCR by health professionals	Challenges faced by KII regarding addressing the BPCR among pregnant women  Challenges faced by KII regarding addressing BPCR at a health facility  Suggested intervention strategies by KII to address the BPCR among pregnant women  Suggested intervention strategies by KII to address the BPCR by health professionals  Suggested intervention strategies by KII to address BPCR by the health facility

### 5.5.1.1 Theme 1: Obstetric problems encountered by pregnant women during the pregnancy process

This theme deals with danger signs during pregnancy, childbirth, and the first two days postpartum. Detecting pregnant women’s own perceptions of danger signs helps to create an awareness of the key danger signs in the pregnant woman’s pregnancy process to act if problems occur.

#### ***Category 1: Key danger signs during pregnancy***

FGD participants' findings indicated that some respondents had no awareness of the key danger signs during pregnancy. For instance, a pregnant woman from Health Centre B was asked, “What are the obstetric danger signs that occurred during pregnancy?”

*"I'm not familiar with the problem happening during pregnancy. I came to the health centre to take the vaccine and for a pregnancy check-up, but nobody told me about any danger signs happening during pregnancy." (P5EHC)*

One of the participants mentioned danger signs such as:

*"The problems that arise during pregnancy can be vomiting, weakness of the body, and the foetal movement may stop." (P6EHC)*

The above results revealed that the pregnant women in this study area did not get a chance to develop an awareness of the key danger signs. The health professionals should expect to address the key danger signs occurring during pregnancy for the pregnant women during the ANC visit.

Pregnant women from Health Centre C mentioned vaginal bleeding as the most frequent danger sign based on her previous pregnancy problems:

*"I was six months pregnant before this pregnancy, and the blood and fluids were leaking from my womb. I was afraid of the situation when I came to the health centre. The female health professional wrote me a referral letter to the hospital, and then I was admitted for more than a month. After my problem was treated, I went back home and gave birth in the health centre." (P8OHC)*

An FGD participant from Hospital A mentioned the danger signs that can occur during pregnancy:

*"It is vaginal bleeding, bleeding is a frequent problem during pregnancy, and it might be a kidney problem, more than this I am not familiar with the problems encountered the women during pregnancy." (P7AH)*

## **Category 2: Key danger signs during labour**

The key danger signs during labour suggest that pregnant women can experience prolonged labour, malpresentation, vaginal bleeding, and others. Some of the danger signs during labour are life-threatening for both the mother and newborn.

The findings showed a good awareness of the key danger signs during labour that can help pregnant women easily detect the danger signs without delay and seek obstetric care. The following FGD participants supported this idea when asked to mention the danger signs that can occur during labour:

*“The problem during labour is being unable to give birth at home due to prolonged labour, which leads to making the mother weak. I remember last year when my brother's wife was pregnant for the first time. Her labour was started, but she did not tell anybody. After that, when the labour became strong, the husband took her to the health centre, where the health centre confirmed that the foetus had become weak. When they arrived in the hospital, the foetus was dead in the womb.”* (P6EHC)

Another participant from Hospital A added:

*“The problems I expect during labour time are that fluid can spill out before giving birth; maybe a change of the position of the foetus in the womb who is not in the correct presentation; this makes the mother delay giving birth quickly.”* (P9AH)

Some participants were unfamiliar with most key danger signs during labour. An FGD participant from Hospital A shared the following:

*“The problems encountered by pregnant women during labour are severe headaches; another can be anaemia. I cannot recall more than this; I think I do not remember the others.”* (P2AH)

Another respondent from Health Centre C mentioned the negligence of the family and community in not taking action after noticing the key danger signs, resulting in the delay of pregnant women going to the health facility.

*“For my part, the problem during labour is a delay in giving birth in our area. The family, the community, and other members expect that always the labour is simple for them; they said again, and again, don’t take her anywhere she will give birth now; this saying exacerbates the problems with the labour, resulting in a complicated situation.” (P8EHC)*

### **Category 3: Key danger signs during the first two days of the postpartum period**

Most mothers and newborns’ deaths occurred during the first two days of the postpartum period. This is a critical period that requires urgent care for the mother and the newborn to save their lives.

Assessing the key danger signs during the first two days of the postpartum period can sensitise pregnant women to become conscious of the key danger signs that can occur during this period and to make an urgent decision to seek obstetric care. The FGD participants mentioned the danger signs occurring the first two days of postpartum as follows:

*“Bleeding is one of the problems that occur after giving birth. Bleeding is dangerous for most pregnant women. I remembered my neighbour in the countryside; she was sick during her pregnancy, but nobody took her to the health facility. Some days after giving birth at home, she started to bleed. The bleeding did not stop, so the husband took her to the hospital. Finally, she died, leaving her one-week-old neonate alone.” (P4EHC)*

Another participant from Hospital A mentioned that there were no danger signs for a pregnant woman and her newborn during the postpartum period:

*“Once you give birth, nothing will happen after birth, but in my opinion, breast pain and the child not sucking the breast may be the problem, but I do not know another problem.” (P6AH)*

In contrast, one of the FGD participants from Health Centre C mentioned the following:

*“It is my perception that the problem a woman can face after two days of birth is bleeding. I expect mild bleeding to be normal, but if the woman bleeds a lot, it can harm her and lead to death.” (P4OHC)*

Most of the participants mentioned vaginal bleeding as the most dangerous sign that can occur during the first two days of the postpartum period. However, none of them mentioned sepsis, convulsions, blurred vision, or a severe headache.

#### **5.5.1.2 Theme 2: Obstetric services utilisation by pregnant women**

ANC is a service given to pregnant women from early pregnancy and continuing until childbirth. This theme deals with the perceptions of pregnant women regarding the ANC service. The themes are further divided into three categories: the experience of pregnant women using the ANC service in the living community, the level of pregnant women attending ANC services in the community, the preferred place of giving birth, and the major barriers that hinder pregnant women from utilising ANC services in the community.

##### **Category 1: Experiences of pregnant women using the ANC service in the community**

Assessing pregnant women's experience in using ANC services can develop pregnant women's awareness of the positive perceptions of ANC services. The trends from each participant's experience or sharing experiences enhance the utilisation of early ANC and increase ANC visits.

One of the participants mentioned the reason for attending ANC as knowing the gestational age and getting a vaccine:



*“I was pregnant three times. I am starting ANC when the foetus moves in my womb. My reason for the ANC visit is to know my gestational age and to have a vaccine; more than this, I do not know.” (P4EHC)*

The participants were asked to explain their experiences of the ANC services and the benefits of ANC. One of the participants mentioned the benefits of ANC visits as follows:

*“The benefit of ANC is not questionable. During antenatal care, it is possible to identify the status of the pregnancy and associated problems. Unless social and other issues require a follow-up visit to the ANC, as much as possible, I have planned two to three ANC visits throughout this pregnancy because they can prevent complications resulting from pregnancy and childbirth.” (P12EHC).*

### **Category 2: The trends of pregnant women attending ANC services in the community**

Identifying the trends of pregnant women who attended ANC services in the community helps to determine why pregnant women do not attend ANC or the reasons for regular ANC visits. Identifying the positive and negative trends is useful to fill the gap in the ANC services.

The discussant mentions their level of ANC service as follows:

*“Due to a lack of awareness of the benefits of ANC, pregnant women start the ANC at the time of late pregnancy or when they face a problem related to the pregnancy. If the pregnancy is normal for her, she does not feel sick. She gave birth without attending ANC. Most of the pregnant women in our community do not start ANC visits at the early stages of pregnancy since being pregnant is usual and they are not expecting bad things related to pregnancy.” (P4AH)*

Another participant indicated that pregnant women visit the health facility when they feel sick. This may indicate a lack of awareness of the purpose of ANC visits among pregnant women and the community:

*“I want to attend an ANC visit only when I feel sick; when I’m normal, I stay home without having an ANC visit. I am so busy with household activities throughout the day that if you go to the health facility frequently for an ANC visit, the community assumes that you are sick.” (P11OHC)*

### **Category 3: Major barriers that hinder pregnant women not to attend ANC services**

Things that are barriers for pregnant women preventing them from attending ANC services can be a lack of awareness of the services, a lack of transportation, socioeconomic factors, and the negative perceptions of the husband and the community towards ANC services. Pregnant women were asked to identify the barriers that hindered them from attending ANC services.

One of the participants mentioned the following ANC service barriers:

*“I knew the benefit of ANC visits, but due to many constraints, like transportation, a lack of money, and busy household work, I did not use ANC services at the early stages of pregnancy or the full follow-up visit of the ANC.” (P6OHC)*

Another participant mentioned that the long waiting time at the health centre was one of the reasons for not attending the ANC services:

*“Long waiting times at the health centre deter me from making frequent ANC visits. I have to get back home without delay because I have many responsibilities there, and sometimes I do not get a cart to travel home if it is too late.” (P4EHC)*

Another participant revealed that her husband does not support her when she goes to the hospital:

*“When I go to the hospital frequently for ANC visits, my husband makes me feel as though I have neglected my household work and as if I have not taken care of my children; therefore, I only attend a maximum of two visits to the health centre throughout my pregnancy.” (P3OHC)*

Another pregnant woman also mentioned the barriers to utilising the ANC services:

*“Distance and time spent staying during the ANC service can affect the utilisation of the ANC visit. Most pregnant women are housewives; no one helps them with the household work, so she wants a fast service that does not keep her in the hospital for a long time. Getting the service urgently is very difficult; sometimes they give an appointment for the next day.” (P9AH)*

A lack of money was mentioned as a challenge regarding the ANC visit:

*“One of my challenges is a lack of money. To get all the services and transportation, I have to have money. Nowadays, all things are expensive. The health professionals said the ANC service is free, but almost all the drugs are prescribed by the health centre to buy at an unaffordable cost at the private pharmacy.” (P3OHC)*

#### **Category 4: Institutional delivery service use of pregnant women**

Identifying the place of birth for pregnant women during pregnancy ahead of the onset of labour helps prevent obstetric complications related to the birth and the first two days of the postpartum period. This theme is divided into two sub-categories: reasons to prefer giving birth at home and at a health facility.

##### **Sub-category 4.1: Reasons pregnant women prefer to give birth at home**

Establishing why a pregnant woman prefers to give birth at home can be used to predict the opinion of the pregnant woman, what she likes and dislikes during labour, and make the health facility environment concomitant to the home

environment by fulfilling her social and cultural needs. The following question was asked, "What are the reasons pregnant women decide to give birth at home?"

A pregnant woman from Health Centre B mentioned that the distance from the health facility forced her to give birth at home:

"My home is far away from the health centre; if it were nearer to me, I would like to give birth in the health centre, but *it is* not. I have borne three of my children in my home, even if I am suffering a lot. Finally, I gave birth to my third child at home." (P7EHC)

Another participant mentioned that the home environment is more comfortable than the health facility:

*"I preferred a home delivery to a health institution because everything is available at home. For instance, if you want to get food, you will get it soon; the same thing is true: if you want to drink coffee, you can get it at home. You are always a stranger at the health institution; I don't feel free as my home; if the government builds a nearby health centre, I may give birth there."* (P12AH)

Poor privacy was mentioned as one of the reasons for not giving birth in a health facility:

*"I like to give birth in my home unless my labour is complicated because my resident home is comfortable for me. Giving birth in the health centre can expose me to the cold because my body is exposed to open air and can be seen by anybody, but since I experienced birth attendants not being available at home, I have delivered my second baby in the health centre."* (P7OHC)

#### **Sub-category 4.2: The reason pregnant women preferred to give birth in a health facility**

Institutional deliveries with skilled birth attendants are one of the strategies that play a role in decreasing maternal and neonatal mortality. Assessing the perceptions of pregnant women and why they prefer giving birth in a health facility can help obtain a better understanding of the advantages of giving birth in a health facility and encourage pregnant women to give birth there. The following question was asked, “What are the reasons for pregnant women preferring an institutional delivery to a home delivery?”

The FGD discussant shared the following regarding her preference for giving birth at a health facility:

“It is advantageous for the woman when she gives birth at a health facility because everything is complete here. After the placenta is removed, and the bleeding has stopped, I can possibly go home without any problems” (P6OHC).

Another discussant opined that the advantage of giving birth at a health facility was to prevent complications:

“Instead of giving birth at home, it is better to give birth at the health facility because if the labour starts at night and if you encounter a problem, it is very difficult to access transportation to reach the health facility, and death can happen without getting any treatment. Therefore, I prefer giving birth at the health facility to giving birth at home.” (P8AH)

#### **Category 5: Accessibility of referral services**

Getting a facilitated referral service without delay to access the referral health facility enables on-time treatment to address life-threatening emergency obstetric complications that can arise for the pregnant woman and her newborn. This theme

is divided into two themes: decision-making during referral and challenges during referral.

### **Sub-category 5.1: Decision-making with regard to referrals**

A lack of urgent decision-making by the pregnant woman, her family, her husband, and the community during referral creates unnecessary delays in identifying and reaching a proper health facility. Due to some complications, the time between the onset of the complication and the occurrence of death is short.

It is revealed that in most places, a lack of urgent decision-making worsens the situation of pregnant women and labouring mothers. Staying at home for a long time can make the women too weak to deal with the situation; therefore, raising awareness in the community about the importance of early referral for complicated cases can improve urgent decisions during the referral time. The following question was asked, “Who is the decision-maker during the referral for good service?”

One of the FGD participants shared:

*“... It is usual to delay regarding referrals because of our perception that labour or giving birth, it is always the right thing not to make a decision urgently. Some women stay at home for more than a day or even longer. Eventually, she becomes weak, and then the family or the husband try to search for transportation, money, or neighbours to carry the woman to the health facility. Our community is still not alert to the fact that the labouring mother needs urgent help to facilitate a normal birth.” (P3AH)*

Another participant also revealed that the family and the traditional birth attendants did not tell the women to make an early referral to the higher health facility:

*“The traditional birth attendants or the family do not know how to identify what kind of labour complications the labouring women have. Most of the time, the traditional birth attendants do not force the woman to go to the health centre as early as possible; they*

*send her there after she becomes exhausted. This situation leads to difficulty in managing labour complications, which can end the lives of the mother and child.” (P6OHC)*

During labour, the husband mostly decides to access the referral place. Due to the husband's power to pay for a rental car and prepare money for the hospital fee, he can decide on a referral. Because of the labour pains and other stress conditions, the women are not able to decide whether to go to the referral place during labour:

*“When the woman is in labour, the labour can be intense and painful, and she was not given time to discuss the issue very well. The husband usually decides on the referral with the traditional birth attendant or with the family and neighbours. Some people advise staying at home because of the saying; the labour will progress; she will give birth now. This delay may worsen the health condition of the woman and the foetus.” (P6EHC).*

### **Sub-category 5.2: Challenges during referral time**

Identifying challenges during the referral time helps predict what kind of problems will occur and provide urgent solutions for the problems encountered. The following question was asked, “What challenges do pregnant women encounter during referral?”

The participants contended that getting a means of transportation during referral is one of the challenges of arriving at the referral place. Due to the scarcity of cars, they use local transportation systems like carts and horses, especially if it is at night and they cannot get a cart to carry the labouring women to the health facility. Facilitating the availability of transportation around the health facility can solve this problem:

*“... The mechanism of transportation from home to the health centre is a cart. If a horse cart was not available, people had to carry the women. When labour starts at night, it is not easy to travel*

*by horse cart, which delays the labouring mother's arrival at the health centre.” (P3OHC)*

Other participants also mentioned that distance and a lack of transportation are the problems that hinder pregnant women from accessing referral health facilities:

*“It is difficult for the rural resident women to access the referral health facility when encountering a problem because there is no car. As an option, sometimes the health centre ambulance serves the community, but one ambulance is unable to serve the entire area unless God saves the women in a difficult situation who will not survive due to a delay in arriving at the health institution.” (P8EHC)*

The participants mentioned a lack of urgent decision-making by the husband and the family of pregnant women during referral. A campaign to increase awareness in the community about the benefits of urgent decision-making to save the lives of mothers and newborns should be conducted at the grassroots level:

*“One of the challenges for the pregnant women during referral is the delay in decision-making; the husband and family member are not making urgent decisions; instead, they are waiting for the change in labour to happen, even if the health worker has told them an urgent referral was necessary.” (P4AH)*

### **5.5.1.3 Theme 3: Birth preparedness of pregnant women**

The birth preparedness and complication readiness practices of pregnant women were assessed in this study. This theme can increase pregnant women's awareness of the benefits of birth preparedness as one of the strategies to prevent maternal and newborn mortality, especially in rural areas with poor infrastructure. The theme is divided into many categories: saving money, identifying the means of transportation, planning the place of birth, identifying skilled birth attendants, accompanying the women during the referral time, and others.



### **Category 1: Saving money to utilise during an emergency**

Most pregnant women agreed with the benefit of saving money during pregnancy for obstetric emergencies. One of the participants mentioned the benefit of saving money based on her previous pregnancy experience and what she faced due to a lack of money:

*“It is my second pregnancy; I have started saving money because I encountered prolonged labour and birth complications during my first pregnancy. I faced transportation problems and a shortage of money to buy drugs that were used while giving birth. Learning from my previous experience, it is better to prepare before the problem happens.” (P4AH)*

Another participant mentioned that she did not save money; instead, she planned to prepare food to use after giving birth and to buy clothes for the newborn:

*“Since my birth date is not near, I am not preparing at this time. When the due date is near, I will prepare food for myself and clothes for my baby.” (P1OHC)*

Some participants also shared others' experiences on the benefits of saving money to use during emergencies, for transportation, and to cover other expenses:

*“I have prepared myself to give birth at the health facility. Since it is my first pregnancy, my elder sister told me that I have to save money for transportation and other expenses necessary during birth.” (P9OHC)*

### **Category 2: Identifying means of transportation**

The participants discussed how identifying the means of transportation ahead of the obstetric emergency enabled them to reach the health facility without delay. Options for transport should be identified instead of relying only on the free ambulance service of the health centre because one ambulance does not cover all the areas:

*“The number of ambulances in the health facility is insufficient to serve the labouring mothers. Only one ambulance served the entire labouring mother population in the district. This situation makes pregnant women arrive late or makes them unable to give birth in health institutions due to the lack of an ambulance. My neighbour, who faced complicated labour at home, said that when the driver called, he was taking other women to the hospital. Until the rental car arrived, she bled a lot. After she gave birth at the Assela Hospital, she was admitted for more than a month for severe blood loss.” (P2EHC)*

The means of identifying transportation during obstetric complications mentioned by the participants were having the phone number of the health centre ambulance driver to call it early. For some participants, saving money for transportation was difficult due to a lack of money, and the husband and family did not give this due attention:

*“As much as possible, I try to access the phone number of the health centre ambulance driver. If I had it, I would prepare the money for transportation, but money is scarce. I am not preparing more than I have mentioned since emphasis is not placed on labour and delivery by the husband or family; they regard it as a normal process.” (P4EHC)*

### **Category 3: Planning place of giving birth**

Getting a free service without payment encourages pregnant women to plan on giving birth in a public health facility. Most participants mentioned planning to give birth at the public health facility because some services are free:

*“I have planned to give birth in this hospital because some of the services are given freely without payment. The ultrasound machine also observes me without payment. I am satisfied with this free service.” (P4AHO)*

Some of the pregnant women are planning to give birth in the hospital, but due to a lack of transportation services, they fear not being able to access transportation during labour. They discussed the situation based on the previous experience of their neighbour, who had encountered a problem:

*“If transportation services were facilitated, I would have planned to give birth in the hospital, but the hospital did not provide ambulance service for pregnant women during labour. The lack of transportation during the night caused the labouring mother not to reach the hospital on time. I remember my neighbour’s labour starting at night with no one in the house with her. The strength of the labour increased without any assistance. She gave birth at home, but she bled a lot. Finally, when she went to the hospital, on arrival, she died.”* (P12AH)

#### **Category 4: Identifying skilled birth attendants**

Most pregnant women were not familiar with the importance of identifying skilled birth attendants during pregnancy. The participants mentioned that labour can be a normal, ongoing process, so there is no need to identify a skilled birth attendant:

*“God solves all problems since we are in the hand of God; our preparation is nothing; I will not expect complications to happen, so there is no need for me to identify a skilled birth attendant.”* (P6EHC)

#### **Category 5: Accompaniment during obstetric complications**

The FGD participants discussed the importance of having a person accompany them during obstetric complications and labouring time. Since the pregnant woman cannot do anything when she is in labour, it is vital to identify a person to accompany her to facilitate the treatment and care given by the health facility:

*“Primarily, my husband, a female relative, or my friend accompanies me when I go to the health facility to give birth and if*

*any problems arise related to the pregnancy. Trying to go to the health facility alone is not good because pregnant women, during labour pain and other obstetric complications, cannot manage to get care and treatment on time.” (P11EHC)*

### **Category 6: Benefit of early birth preparedness**

This sub-category describes the importance of early birth preparedness to prevent obstetric and newborn complications related to pregnancy, childbirth, and the early postpartum period. The theme is categorised into two categories: the importance of early birth preparedness during pregnancy and the importance of early birth preparedness during labour and childbirth.

### **Category 7: Benefit of early birth preparedness during pregnancy**

Most participants mentioned the advantage of early birth preparedness in early pregnancy. Some participants were unfamiliar with birth preparedness, and others were reluctant to plan for birth preparedness:

*“As I have understood it, early preparation at the early stage of pregnancy is advantageous because instead of searching for a solution when problems arise, it is better to plan early preparation.” (P1EHC)*

Another participant mentioned that she was unaware of what was necessary to prepare for the birth because nobody had told her:

*“I have no awareness about birth preparedness since this is my first pregnancy. During my ANC visit, the health worker did not tell me, I will plan it in the future.” (P6EHC)*

Some participants did not pay attention to early birth preparedness:

*“Since my birth date is not near, I do not prepare at this time. When the due date has come, I will prepare food for myself and clothes for my baby.” (P1OHC)*

### **Category 8: Importance of early birth preparedness during labour and childbirth**

The participants complained that the health workers did not teach them about early birth preparedness. Due to a lack of awareness, they did not know what kind of birth preparedness plan they should have:

*“Unless the health worker teaches the pregnant women about the benefits of birth preparedness and the complication readiness practice, including me, most women have no awareness of what kind of preparations are necessary during pregnancy, labour, childbirth, and the postpartum periods.” (P11EHC)*

Some participants agreed on the importance of early birth preparedness to prevent complications that could occur during labour and childbirth:

*“... I prepare foods that I will use when I give birth and during the postpartum period. I have accepted the idea of preparing for giving birth to prevent problems from happening during the birth process, but I have not started saving money.” (P6AHO)*

### **Category 9: Support and care given for pregnant women during obstetric period**

This sub-category deals with pregnant women's support throughout their journey of pregnancy and childbirth. The sub-category is categorised into three aspects: support by the husband, a relative, and the community.

#### **Sub-category 9.1: Husband support**

Husband support during the obstetric period is important for a healthy pregnancy and a safe birth. The lack of husband support can discourage pregnant women from utilising obstetric care. The participants discussed the husband support for pregnant women based on their opinions as follows:

*“My husband supports me by making suggestions about my pregnancy. Sometimes, he accompanies me to the health institution. He helps me by washing our children's clothes, with house cleaning, and with household work.” (P3OHC)*

Another FGD discussant mentioned that her husband supported her by giving her money but did not accompany her to the health facility:

*“My husband helps me with the housework and looks after my children when I am gone to the health facility. Sometimes, he cooks food for us. Since I have no money, he is giving me money for transport, to buy drugs, and other expenses for the health facility service. He is not accompanying me to the health facility. Most husbands feel that pregnancy is a woman's business.” (P9AH)*

One of the participants mentioned that she was satisfied with her husband's support:

*“My husband helps me with all that I am working on in the household activities, cooking food and looking after our children, and he shared all my challenges and happiness; I am so happy with his conduct. He is especially helpful to me when I am pregnant.” (P12EHC)*

### **Sub-category 9.2: Relative support**

Relative support is the support given to the pregnant woman by her family members, those in a marriage relationship, and her neighbours. During pregnancy, labour, and the postpartum period, when pregnant women get help from relatives, it can reduce the risk of obstetric complications by minimising the burden of work of pregnant women, enhancing their decision-making, and creating opportunities to utilise obstetric care. The following question was asked, “What kind of support is given by your relatives during your pregnancy?”

*“My family helps me with household activities by preparing food, house cleaning, fetching water from a far distance, and caring for my children when I am out of my home for ANC visits and the market. During and after the birth of my child, all the chores were conducted by my family because I had no power to accomplish a single household activity until I recovered from pain and weakness during labour and childbirth.” (P8AH)*

When a pregnant woman did not get support from the family during the postpartum period, she mentioned that it was difficult to manage the situations related to childbirth:

*“I was married far away from my family, and we are living away from my husband’s family, so no one helps me at any time, especially since I suffered a lot during the postpartum period. Getting help from somebody is very necessary; for instance, I was sick for some days during my first childbirth, and I had great difficulty handling my newborn because my husband lacked experience with newborn care.” (P10OHC)*

### **Sub-category 9.3: Community support**

Community support for pregnant women is most needed when pregnant women encounter obstetric problems during labour, childbirth, and after childbirth. The local community facilitates transportation, solves money shortages, and participates in solving the pregnant women’s problems during the encounter. The following question was asked, “What kind of support did you get from your community during obstetric complications?”

The FGD discussant mentioned the community support for pregnant women when there was an obstetric complication:

*“My resident kebele (small unit next to the district) is far away from the health centre; it takes more than three hours to travel on foot and to access the main road it takes more than one hour. I had a*

*difficult labour during the birth of my second child. The community carried me to the access road, but we could not get a car on time. They carried me to the health centre to save my life and my child's.*" (P5EHC)

Another respondent from Hospital A also mentioned that the community's support for pregnant women is mandatory to access the health facility quickly during obstetric emergencies:

*"The community or the neighbours help some women by contributing money when money is scarce for transportation. Also, helping the labouring woman if there is a delay in giving birth at home by carrying her in a group to the health facility when there is no transportation."* (P7AHO).

Some of the participants were not familiar with the need for help for pregnant women during emergencies from the community to facilitate accessibility to the health facility.

The participant from Health Centre C shared the following:

*"I did not get help from the community; only my husband took me to the health facility at the time I was faced with a severe headache. I do not know what kind of help the pregnant woman receives from the nearby community."* (P2OHC)

### ***Category 10: Challenges and barriers for pregnant women to plan birth preparedness***

This category deals with the challenges and barriers that prevent pregnant women from planning birth preparedness and complication readiness practices to prevent obstetric complications. The theme is divided into three categories: challenges and barriers at the individual pregnant women, health professionals, and health facility levels.



### **Sub-category 10.1: Challenges and barriers to plan birth preparedness at the pregnant women's level**

The following question was asked, "What challenges and barriers prevent pregnant women from planning for birth preparedness?"

The participants were asked to explain the challenges and barriers resulting in pregnant women not planning for the birth. The participant mentioned a lack of understanding of the benefits of birth preparedness, the negative perceptions of husbands and the lack of willingness to plan for birth preparedness. One of the participants opined:

*"... My obstacle to preparing for birth preparedness is a lack of understanding of the benefits of early preparation. Another obstacle is my husband's poor perceptions and lack of support for me; unless the husband does not support the woman, she does nothing alone." (P8AH)*

The challenge preventing some pregnant women from planning birth preparedness was a lack of money for transportation to attend ANC services and to buy drugs and other materials:

*"... One of my challenges is a lack of money to plan for birth preparedness. To get all the services and transportation, I have to have money. Nowadays, all things are expensive. The health professionals said the ANC service is free, but almost all the drugs are prescribed by the health centre to buy at an unaffordable cost at the private pharmacy." (P3OHC)*

### **Sub-category 10.2: Challenges for the pregnant women from the health professional side not planning for birth preparedness**

The participants alleged that the health professionals gave inadequate information during the ANC visits; thus, they sometimes returned home without any

information. If the health professionals had given them information about birth preparedness, they could have planned for it.

*“Due to the burdened activities of the health worker, adequate information was not given to me about birth preparedness and complication readiness during my ANC visit, except she told me about the next ANC visit appointment.” (P6AH)*

### **Sub-category 10.3: Challenges for the pregnant women from the community side not planning for birth preparedness**

The following question was asked, “What challenges result in pregnant women not planning for birth preparedness from the community side?”

Among the challenges that pregnant women faced from the community were husbands, families, and the community’s neglecting to predict the risks that could be present during the obstetric period. Due to their poor perception that pregnancy was always a normal process, they did not give priority to planning birth preparedness:

*“... The expectation of the husband, family, and community that pregnancy is always normal makes them negligent. They perceived it as a culture that did not give due attention to the complications raised. Therefore, they don’t plan birth preparedness before the complication happens.” (P9EHC)*

#### **5.5.1.4 Theme 4: Suggested strategies to improve the birth preparedness of pregnant women**

This theme deals with strategies to improve the birth preparedness practices of pregnant women to prevent obstetric complications during pregnancy, childbirth, and the first two days of the postpartum period. The theme is divided into four categories: suggested strategies by pregnant women and strategies pregnant women use regarding the expectations of the family, health professionals, and health facilities to improve pregnant women’s birth readiness.

### ***Suggested strategies to improve birth preparedness by pregnant women***

The participants were asked to suggest strategies for pregnant women to improve birth preparedness. They mentioned a lack of income, a lack of money to plan birth preparedness, and not attending obstetric services as some of the challenges in planning birth preparedness. Hence, they suggested the empowerment of pregnant women to generate their own income and enhanced male involvement in the BPCR plan for pregnant women. One of the participants suggested the following:

*“The empowerment of pregnant women to generate their own income can enable the women to make their own decisions, plan for birth preparedness, and utilise other obstetric services.” (P5AH)*

The participants also raised the issue of financially challenged pregnant women, as it is important for the government or a health facility to help such pregnant women by supplying food and other materials to prevent obstetric complications:

*“... One of the strategies should be to assist poor pregnant women by providing money, transportation, and adequate information about the benefits of birth preparedness and a complication readiness plan. Due to a scarcity of resources such as money, transportation, and sometimes a lack of food, pregnant women’s lives are jeopardised, or they die unnecessarily. To save the lives of women and newborns, the government and the health facility should plan more services, including the food supply.” (P12AH)*

### ***Category 2: Suggested strategies for improving birth preparedness at the family level***

The importance of male involvement was identified and discussed by the participants. They averred that most of the maternal health services did not involve males; therefore, pregnancy seemed to be a woman’s problem only. Thus, pregnant women should get their husbands or partners involved in obstetric care

services. Accordingly, the health facility should prepare an awareness-creation programme for male partners on birth preparedness:

*“For my part, improving male involvement in maternal and child health services is crucial. Most males consider all the reproductive issues to be female. The health institution needs to raise awareness about birth preparedness and complication readiness practices for males at the community or village level.”* (P12OHC)

The contributions of family members to prepare pregnant women for birth preparedness by supporting household activities and accompanying them to a health facility during labour were mentioned:

*“Family members, including relatives, need to have an awareness of birth preparedness to support the pregnant woman in household activities, accompany her to the health centre during labour, supply money, and assist in solving other problems.”* (P6EHC)

### ***Category 3: Suggested strategies to improve birth preparedness of pregnant women expected from health professions***

In these findings, the participants discussed the conduct of health professionals as poor and lacking respect. One participant shared:

*“Some of the health workers do not have respect for pregnant women during ANC visits. If they don’t answer our questions in a polite manner and with respect, it is better to provide training on good conduct and how to approach pregnant women with a smile.”*  
(P2AH)

The participants discussed minimising the burden of health workers to increase the quality of the service and enable them to supply appropriate information about birth preparedness to pregnant women.

*“Due to the overburdened activities of the health workers, the health worker did not give me adequate information about birth*

*preparedness and complication readiness, apart from telling me about my next visit appointment.” (P3EHC)*

**Category 4: Suggested strategies to improve the birth preparedness of pregnant women expected from the health facility**

The participants indicated that the nearby health posts conducted by health extension workers did not provide a high-quality service, including the ANC and service delivery package. If necessary, the services given by health extension workers at the health post level can minimise the burden of pregnant women travelling long distances to receive ANC and delivering good services:

*“Increasing the service quality provided by the health extension workers is necessary because they are not delivering good service at their health posts. If all the necessary things are done at the health post to serve pregnant women during pregnancy, the labouring time, and after birth, there is no need to travel long distances for pregnant women to seek services at the health centre, especially for the pregnant women coming from rural areas.” (P10OGH)*

These findings stated that to prevent complications in the first two days of the postnatal period, a home-based postnatal care service should be provided by the nearby health facility. Due to a lack of transportation and according to cultural norms, women are not allowed to go outside the home within a few days after giving birth; therefore, it is difficult for pregnant women to plan the first two days of postnatal care at the health facility:

*“According to our culture, a woman who gives birth early is not allowed to go outside the home because she may encounter a problem due to her weak body. Most women are not permitted to go to a health facility within two or seven days postpartum.” (P5AHO)*

*“To solve all obstacles, the home-based early postnatal care service should be planned to be provided by the health centre. Changing the perception of the community by giving sustainable information about the importance of early postnatal care is necessary; additionally, getting support from influential community members is important because I am not allowed to go out of my bed to the solar before a minimum of fifteen days after delivery, except that I am going to the toilet early in the morning before sunrise.” (P8EHC)*

Pregnant women living far from a health facility suggested that the facility build a maternity waiting area. To prevent obstetric complications, pregnant women in their third trimester and nearing the time of the birth should stay in the maternity waiting room until they give birth. Pregnant women coming from rural areas who give birth in the health facility are suffering due to a shortage of transportation and the inability of the health facility to arrive without delay when labour starts. The participant stressed the importance of a maternity waiting area in decreasing maternal obstetric complications during pregnancy, labour, childbirth, and the first two days of the postpartum period:

*“For the pregnant women who will come from a far distance and are expecting complications during labour. The health institution must build a maternity waiting area with furnished materials, which helps the pregnant women stay until they give birth to prevent complications during labour, the delivery, and the postpartum period.” (P6EHC)*

### **Category 5: Analysis of data from in-depth interviews with health professionals**

In-depth interviews with the health professionals working at the ANC service provision, MCH programme co-ordinators, and facility directors enabled the researcher to identify the gap, challenges, and possible future strategies to improve birth preparedness practice for better outcomes in pregnancy and childbirth. An in-

depth interview provides an opportunity to ask follow-up questions, probe for additional information, and generate a rich understanding of participants' attitudes, perceptions, and motivations of participants (Communication for Research, 2021). This category identifies the challenges of implementing birth preparedness for pregnant women and assesses suggested intervention strategies by health professionals to improve birth preparedness for pregnant women.

#### **Sub-category 5.1: Challenge faced by health professionals to implement birth preparedness**

This category deals with the challenges faced by health professionals in intervening to improve the birth preparedness of pregnant women. The sub-category is divided into three categories: health professional level challenges, health facility side challenges, and pregnant women's side challenges.

#### **Sub-category 5.2: Challenges faced by the health profession to implement birth preparedness**

The study identified the job burden of health professionals due to the inadequate assignment of health professionals to address the obstetric problems of pregnant women during ANC visits, childbirth, and the postnatal period and to offer high-quality maternal service. Due to time shortages, the assigned health professional could not give health information, especially at night, because only one midwife was assigned throughout the night:

*"... The influx of labouring mothers increases more at night than in the daytime, so the health centre only assigned one midwife for night duty. One midwife was serving the whole procedure conducted on the labouring mother, including filling out partographs, following the progress of labour, managing the delivery, and postnatal care." (K11EHC)*

*"During one night, about five to 10 deliveries are conducted by one midwife, which makes the professional busy beyond the scope of*

*one professional to manage all cases alone. Unless this problem is solved, it creates a burden on the quality of service.” (KI2EHC)*

Other key informants from the Assela Hospital also mentioned the shortage of time due to the increased daily flow of pregnant women for the ANC service to address BPCR information. Another challenge faced was narrowing the ANC room to give quality service:

*“The professional challenge to implementing BPCR in our hospital is due to the large daily flow of pregnant women, which does not enable us to address the benefit of BPCR to each client. This creates a shortage of time for the health professional. Another challenge is the narrowing of the room to give health education.” (KI1AH)*

### **Sub-category 5.3: Challenges the health professional faced to implement BPCR from the institutional side**

The participants were asked the following question, “What challenges do health professionals face when implementing BPCR to pregnant women at the health facility?”

The findings of this study identified the challenges faced by health professionals when implementing BPCR at the health facility as a lack of infrastructure like a maternity waiting area, a shortage of drugs and medical equipment during ANC and childbirth, and a shortage of money for ambulance maintenance:

*“The biggest challenge was that the pregnant women came from a far distance with false labour. Until true labour begins, the health centre has no waiting area. If they are not staying here when they get back home, the problem can be complicated. Pregnant women might encounter a problem that worsens their labour condition at home.” (KI2EHC)*



Another participant mentioned that due to the shortages of drugs and medical equipment, pregnant women are forced to buy from outside pharmacies and are exposed to unnecessary costs. This disappoints the pregnant woman, no matter what she has prepared for birth preparedness:

*“Since the ANC service is free, we encountered scarce supplies of drugs, surgical gloves, and others. When the prescription paper is given to the women to buy from outside pharmacies, they feel unhappy because they assume everything seems available at the health centre. They are not interested in buying anything from outside the health centre; this situation dissatisfies the pregnant women and encourages them not to plan for birth preparedness.”*  
(KI3EHC)

A shortage of transportation due to the inadequate budget allocation for fuel and ambulance maintenance by the health facility exposed the pregnant women to having to rent a car privately, which is beyond the capacity of the pregnant women’s family to pay:

*“A scarcity of budget for the maintenance of ambulances and fuel to provide transportation services for labouring mothers is one of the challenges. This time, of two ambulances, one is functional, but the scarcity of money makes it impossible to maintain the ambulance to give more services. This problem exposed the family of the labouring mother to the further expense of a rental car, which costs about 2000 to 3000 ETB (USD 40 to 60) to travel 25 to 30 kilometres. This payment would be beyond the capacity of the family of a pregnant woman, even if they had planned birth preparedness.”* (KI2OHC)

Another institutional challenge to implementing birth preparedness is that the components of BPCR for pregnant women are not included in the ANC registration book or in the monthly report formats of obstetric services; therefore,

there is no tangible data on pregnant women who have planned for birth preparedness:

*“We have no plan or registration book to identify who is prepared for birth preparedness and complication readiness practice. We are only informing the clients orally about the importance of BPCR, which is not included in the monthly report format. We do not have the number that indicates how many of them were prepared for birth preparedness.” (K1AH)*

Another key informant who supported the above challenges asserted that the BPCR of pregnant women did not include any standard operating procedures, and they had no data that indicated which pregnant women had planned for birth preparedness:

*“We do not have the exact number of pregnant women planning birth preparedness. The midwife informs them about birth preparedness during the ANC visits; furthermore, we do not have a registration book or the standard operating procedures (SOP) tools from the Federal Ministry of Health (FMOH) or the Oromia Regional Health Office (ORHO) to use as a guide for birth preparedness and complication readiness practices.” (K13EHC)*

Institutional policy changes are also one of the challenges to planning birth preparedness, which decreases the ANC follow-up visits due to the unaffordable prices of some drugs and medical equipment:

*“...The institutional policy challenges from free service to payment. Women from rural areas with poor economic status don't have money to buy all the necessary materials during ANC, labour, delivery, and the postpartum period unless the service is free. The pregnant women are not eager to plan BPCR and to attend ANC follow-up visits. The services given free of charge in our hospital are ANC, delivery services, ultrasound, and caesarean sections.*

*Other services that need payment are drugs, gloves, and other materials that pregnant women cover.” (KI3AH)*

#### **Sub-category 5.4: Challenges the health professional faced with regard to implementing BPCR from the pregnant women’s side**

In the in-depth interview, the participants stressed the importance of starting ANC visits early for pregnant women to plan birth preparedness. However, most ANC attendant mothers only came in their third trimester, almost when labour was starting; therefore, they could not plan birth preparedness:

*“One of the biggest challenges for pregnant women is that they do not come on time for the ANC visit. Some of them came in their third trimesters; others came during labour. The lack of early ANC visits resulted in pregnant women not planning for birth preparedness during pregnancy, labour, and the postpartum period.” (KI3OHC)*

Other key informants addressed how pregnancy outside marriage makes pregnant women not engage in planning for birth preparedness due to neglecting the foetus, the low socioeconomic status of the woman, and shying away from the social norm of pregnancy outside marriage, making them unable to come for an ANC visit. When they experience complicated labour and are referred to a higher health facility, they do not have money for transportation and other expenses:

*“There are also pregnant mothers who became pregnant out of wedlock and did not have an ANC visit due to many social constraints. This problem complicated the referral system since they did not have money for transport or a person to accompany them to the referral area. Due to no budget allocated by the health centre for this purpose, we beg money from people and staff to enable her to travel to the referral places.” (KI1EHC)*

A key informant from the OHC mentioned that the poor educational status of the pregnant women made them unable to implement their birth preparedness plan,

regardless of what the health professional had told them about the benefits of birth preparedness:

*“We explained the benefits of birth preparedness for the pregnant women during the ANC visit, but due to their low literacy status, they had forgotten to implement their plan. One pregnant woman lived far from the health centre; her labour started at night; she did not save money for transportation; the health centre ambulance was somewhere else to fetch other labouring women; she did not get a car to arrive at the health centre on time; finally, she gave birth on the road; and she bled a lot when she arrived at the health centre while we tried to save her. She died soon.” (KI1OHC)*

### ***Category 6: Suggested strategies by key informants to improve the birth preparedness of pregnant women***

This category deals with the suggested strategies to improve the birth preparedness of pregnant women to minimise preventable obstetric complications during pregnancy, childbirth, and the first two days of the postpartum period. This category is further divided into three sub-categories: suggested strategies by health professionals from the pregnant women's side, suggested strategies by health professionals from the health professional side, and suggested strategies from health professionals related to health facilities.

#### **Sub-category 6.1: Suggested intervention strategies of key informant health professionals to improve birth preparedness for pregnant women**

The key informant ANC provider mentioned that an intervention strategy to improve the birth preparedness of pregnant women is increasing the awareness of birth preparedness by conducting a women's conference at the family and community levels:

*“The future strategies I suggested will be preparing a women's conference programme to create an awareness of the birth preparedness and complication readiness practice with their*

husbands, including the community and influential persons.”  
(KI2EHC)

The key informant suggested that the intervention strategies that initiate pregnant women to plan BPCR and attend ANC visits reward pregnant women who attend all ANC visits and have a plan for birth preparedness:

*“... Rewarding the model pregnant women who attend all the ANC visits, plan for birth preparedness, and benefit from birth preparedness.”* (KI3AHO)

*“Inviting the women to hear about the trends of pregnant women who encountered or faced pregnancy complications and suffered from a shortage of money, transportation, delays in reaching health facilities during pregnancy, labour, at birth, and the postpartum period, and the mechanism of action she took to resolve the problems.”* (KI1OHC)

### **Sub-category 6.2: Suggested intervention strategies of key informant health professionals to improve birth preparedness from the health professionals' side**

Health professionals are key players in maintaining the health of mothers and children. One of the key informants suggested that increasing the number of midwives in the hospital or health centre can boost the quality of the service and client satisfaction:

*“The number of midwives should be increased based on the number of flows of labouring women at night duty to give quality delivery service and postnatal care services at the health centre, which can increase the satisfaction of clients towards the service given.”* (KI1EHC)

Another key health professional informant suggested that to fill the gap in the birth preparedness plans of pregnant women, training about the benefits of BPCR be

given to the health extension worker living closely with pregnant women at the grassroots level:

*“Conduct training for the health extension worker to mobilise the pregnant women to attend all visits of the ANC service and to create awareness of birth preparedness and complication readiness practices of pregnant women through sustainable health education to change their behaviour from negative perception to positive health-seeking behaviour in the rural area.” (KI3OHC)*

Other key informants also mentioned the importance of giving sensitising training on BPCRPs to health professionals and other groups that contribute to the birth preparedness programme to enhance its success:

*“Giving sensitising training quarterly about the components of birth preparedness for health workers, health cadres, women's health development army, informal leaders, and another important person in the community plays a role in increasing BPCRPs of pregnant women.” (KI3EHC)*

### **Sub-category 6.3: Suggested intervention strategies for key informant health professionals to improve birth preparedness from the health facility perspectives**

The key informant participant addressed the crucial issue surrounding not improving the birth preparedness of pregnant women and the lack of incorporating a birth preparedness programme in ANC, an annual plan of the health facility, or a monthly report of the health facility. This issue should be addressed by the responsible bodies of the federal and regional Ministry of Health to add the programme as one of the ANC components:

*“Helpful strategies to implement BPCRPs is addressing the hot issue of the programme with the federal and regional health offices to include birth preparedness in the annual plan and monthly report of health facilities, which enables health professionals to report the*

*BPCR of pregnant women to regional and federal health offices.”*  
(K1AHO)

Another key informant mentioned disseminating the IEC programme in the health facility to change the poor perceptions of pregnant women of birth preparedness:

*“Education information communication (IEC) and behavioural change communication (BCC) activities will be conducted in all areas at health institutions, at family level, and at community level to encourage women to attend early ANC visits.”* (K11AH)

In the in-depth interview, the participant discussed a gap in male involvement in assisting pregnant women during pregnancy and other maternal health services. Therefore, organising male conferences at the community level to create an awareness of birth preparedness is one of the strategies to improve the birth preparedness plans of pregnant women:

*“One of the main strategies that improve the birth preparedness and complication readiness practice is organising a male conference at the community level on the benefits of birth preparedness and the complication readiness practice. Most males do not volunteer to cooperate with pregnant women in all aspects of the pregnancy during health service utilisation and other issues.”*  
(K10HC)

The participants also suggested other strategies to solve the shortage of money for pregnant women during obstetric service utilisation:

*“Conducting a discussion with the regional health office and the Federal Ministry of Health to supply materials and drugs to give freely to the pregnant woman during ANC visits, labour, delivery, and postpartum care to promote the birth preparedness plan of pregnant women.”* (K12AH)

According to one of the key informants, organising an advocacy group of a WDA is one of the best strategies for gaining access to most pregnant women for birth planning and other maternal services:

*“Organising a women's health development army at the village level to reach the women living far away. This women's development army helps to create an awareness of birth preparedness and complication readiness practices starting in the early stages of pregnancy for the women in their resident area.”*  
(KI3OHC)

Another key informant emphasised the importance of building a maternity waiting area to serve pregnant women living far from the health facility by allowing them to stay there until giving birth:

*“Building a maternity waiting area for pregnant women in the third trimester of pregnancy and coming from far away to stay there until giving birth. This action can prevent shortages of transportation and birth complications at home.”* (KI1EHC)

## **5.6 CONCLUSION**

This chapter presents the study findings of FGDs with pregnant women and in-depth interviews conducted with key informant health professionals, midwives, health officers, nurses working in obstetric care, and programme co-ordinators. Different types of themes were presented to explore strategies to improve the birth preparedness of pregnant women, namely obstetric challenges encountered by pregnant women throughout their pregnancy, the support and care given to pregnant women, and the perceptions of pregnant women regarding ANC services. Other aspects discussed were the preferred places of childbirth, the accessibility of referral services, the components of birth preparedness, the benefits of early birth preparedness, challenges and barriers to planning birth preparedness, and suggested intervention strategies to improve birth preparedness.



In the in-depth interviews with the health professionals, sub-categories that addressed the challenges of improving birth preparedness for pregnant women and possible intervention strategies expected from pregnant women, their families, health professionals, and health facilities were discussed. Chapter 6 integrates the quantitative and qualitative findings and provides a detailed discussion.

## **CHAPTER 6: INTEGRATION OF QUANTITATIVE AND QUALITATIVE FINDINGS AND DISCUSSIONS**

### **6.1 INTRODUCTION**

Pregnant women's views of BPCR practices are important in developing strategies to improve birth preparedness. This research study was conducted to provide a better understanding of the development of strategies to improve birth preparedness and complication readiness practices for pregnant women attending ANC clinics and make recommendations for improvement of the service. This sequential mixed methods approach was conducted to provide a better understanding of strategies to improve birth preparedness. Using this sequential explanatory mixed method approach was supported by Creswell (2018:357), who proposed that combining the two methods is crucial to provide a greater understanding when the study aims to identify factors that influence an outcome, like developing strategies to improve birth preparedness. This research study's findings were presented based on the contents of questionnaires prepared for the quantitative part, the FGD guide, and the KII in-depth interview guide. This enables us to address the dimensions of developing strategies to improve the birth preparedness and complication readiness practice among pregnant women attending an ANC clinic in the Arsi Zone, Oromia, Ethiopia.

### **6.2 INTEGRATION OF QUANTITATIVE AND QUALITATIVE FINDINGS**

#### **6.2.1 Sociodemographic characteristics**

In this study, all (100%) of the proposed pregnant women were drawn from five health facilities that participated in the study. Most (37%) of this research study's participants were between 25 and 29 years old. This was similar to a survey conducted by the Ethiopian Mini Demographic and Health Survey Report, which states that most pregnant women were under the age of 30 (EMDHS, 2019:23).

The educational status of pregnant women in this research study indicated that those pregnant women who could not read and write or had no formal education comprised 13.3%; this finding was lower than the study finding of EMDHS, in which

40% of the study respondents had no formal education. The difference between the two outputs of the studies is mainly due to the time variation, the respondents' geographic location, and the decrease in the percentage of women with no education compared to the previous year (EMDHS, 2019:24).

### **6.2.2 Health service utilisation and the level of birth preparedness**

Maternal health services during pregnancy are mandatory to prevent complications that can occur during pregnancy and childbirth. In this research study, the ANC utilisation of pregnant women for their previous pregnancy was 92%, indicating that the respondents had undertaken at least one visit to the ANC, and only 23% of pregnant women had four visits. The percentage of the first ANC visit of pregnant women in this study was greater than that in the findings of Girmaye and Berhan (2016:26), which was 88.9%, and the study findings of the first ANC visit of Shudura, Yoseph and Tamiso (2020:10), which was 69.1% of pregnant women who had attended the first ANC visit. The

fourth ANC visit percentage in this study was less than those in the other two studies, 65.4% and 37%, respectively. The variation is mainly due to the difference in geographical allocation and the perception of the pregnant woman. When her first ANC visit is normal, the pregnant woman assumes she will be healthy throughout her pregnancy.

The coverage of the fourth ANC visits in this research study was 23%, which was less than the target coverage of fourth ANC visits recommended by WHO as a strategy to avoid preventable maternal deaths by increasing the coverage of fourth ANC visits to 70% and above for the year 2025 in every district (WHO 2021:4).

The purpose and frequency of ANC visits were not well addressed for the pregnant women in this study area. The FGD participants mentioned the reasons why there is a low utilisation of ANC services:

*“I was pregnant three times. I am starting ANC when the foetus moves in my womb. My reason for attending the ANC visit was to*

*know my gestational age and to have a vaccine; more than this, I do not know why I attended." (EHCP4)*

## **6.3 DISCUSSION OF RESULTS**

### **6.3.1 Awareness of birth preparedness and complication readiness**

Awareness of birth preparedness and complication readiness practices is crucial to minimise maternal and neonatal complications during pregnancy, childbirth, and postpartum. This study found that about 76.1% of pregnant women who participated were aware of birth preparedness and complication readiness practices. Health workers were the main source of information for pregnant women to develop an awareness of birth preparedness. Pregnant women received 74.6% of their information from health professionals. The study findings from Cameroon indicated that only about 46.1% of pregnant women were aware of birth preparedness, of which 89.3% received it from health workers. (Ijang *et al* 2019:19). In both studies, the health professionals were the main source of information. An awareness of birth preparedness for pregnant women will be of crucial importance to save women's lives through the journey of pregnancy and childbirth. In this study, a small percentage of participants perceived the benefits of important components of birth preparedness that need awareness. Only 19.1% of the respondents were familiar with saving money for an obstetric emergency, and 5.9% with preparing money for transportation.

In comparison, the frequent cultural practice of preparing food items to consume during birth was engaged in by more than half (53.3%), and 56.6% of the pregnant women were aware of how to identify skilled birth attendants. The same perceptions by the FGD participants supported this finding. The FGD participant from OHC P8 shared the following:

*"I mostly prepared traditional foods that are served for guests, like porridge and buying butter; therefore, I did not have other preparations for labour because pregnancy is a normal process, and we cannot predict what will happen during labour or birth."*

Bobga *et al* (2022:37), conducted a research study which found that 79.1% of the study participants were aware of birth preparedness, 29.1% were familiar with saving money for transportation, 44.2% were aware of having to save money for obstetric emergencies, and 29.4% were familiar with identifying skilled birth attendants, which is less than the findings in this current research study. The findings in both studies stated a need to improve awareness-creation mechanisms for pregnant women about the basic knowledge of birth preparedness and complication readiness practice.

### **6.3.2 Practice of birth preparedness**

Assessing the practice of birth preparedness among pregnant women helps identify the problem-solving approaches of pregnant women during obstetric emergencies. This study identified that 74% of the pregnant women respondents had information about the benefit of birth preparedness practices from health workers; 85.7% of them mentioned that they had prepared to prevent an adverse effect of obstetric complications for the current pregnancy by implementing different mechanisms. A further 78% of pregnant women prepared food items; 63.3% bought clothes for the neonate; 72.9% identified the place of giving birth; 38.9% saved money for emergencies; only 16.1% identified means of transportation; and 4.7% identified blood donors if a blood transfusion is needed. One of the key informants also mentioned the importance of early birth preparation practices:

*“Birth preparedness has a great benefit, especially for the mother and her child. When she plans birth preparedness at the early stage of pregnancy, she will be saved from complications like bleeding, a retained placenta, and foetal distress, and if referral to higher health institutions is needed, she will not suffer from the lack of money for transportation and medical supplies since she has already prepared.” P1EHC*

This study's finding of 85.7% is higher than the finding from a study conducted in India, in which 49% of pregnant women prepared during their last pregnancy to

prevent complications (Ahmad, Mohanty & Niyonsenga, 2022:12). Another study from Ethiopia revealed that only 22.5% of pregnant women engaged in some components of birth preparedness. Ninety-seven percent of the respondents identified the place of delivery, 81.1% identified skilled birth attendants, 34.4% saved money, 13.4% planned the means of transportation, and 3.3% identified blood donors (Wudu & Tsegaye 2021:13). Birth preparedness practice on the major life-saving components is critical but, in most studies, pregnant women focused less on the necessary components, such as identifying skilled birth attendants, planning the means of transportation, saving money for emergencies, and identifying blood donors. Similar views were expressed in the Chancha District, Ethiopia, by Abebe *et al* (2017:4), where only 17.4% of pregnant women were counselled to identify the place of delivery, 2% of pregnant women saved money for emergencies, and 1.4% prepared to access transportation. A study from another part of Ethiopia reported that 27.3% of the participants identified skilled birth attendants, and 5% of the pregnant women identified blood donors for emergency needs (Andarge *et al* 2017:17). In Nigeria, 23% of pregnant women identify the place of delivery (Umeh, Maduakolam & Ezeugwel, 2017:9). The study findings from Ghana noted that 30.5% of pregnant women planned the facility at which to give birth, less than 18% arranged transportation for emergencies, and 32.7% saved money to use during childbirth (Saaka & Alhassan 2021:4). A study from Bangladesh noted that 8.1% of pregnant women planned birth preparedness, 12.4% identified skilled birth attendants, 20.8% arranged the means of transportation during emergencies, and 46.9% saved money to use at the time of birth (Christoou, Hoque, Tashisina & Billah 2017:12).

The systematic qualitative study by Souza, Voge and Gulmezoylu (2014:11) states the reasons for low birth preparedness practices. According to the study, if the women gave birth to their first child without complications, they assumed that planning to give birth at a health facility for the next birth was unnecessary; this is supported by the key informant, ANC service provider P2OHC. He mentioned some of the challenges faced by pregnant women that led to their low birth preparedness:

*"Most pregnant women come to the hospital after a severe complication. We have tried to inform them to prepare ahead of the problem occurring, but they don't do that due to cultural, social, and economic problems. Some are reluctant due to a lack of a perceived understanding of the benefits of birth preparedness."*

### **6.3.3 Awareness of detecting key obstetric danger signs**

Developing an awareness of obstetric key danger signs in pregnant women is a basic component of birth preparedness and complication readiness practice. This study revealed that 68.1% of pregnant women are aware of key danger signs that can occur during pregnancy, childbirth, and the first two days of the postpartum period. For 43.8% of the respondents, the source of information was health professionals, and for 14.1%, it was health extension workers. Some FGD participants had no awareness of birth preparedness, and they mentioned that the health professionals did not inform them about the importance of birth preparedness:

*"If the health worker told me everything that would happen during pregnancy or throughout the pregnancy at the time of the ANC visit, I would have prepared myself, but I assumed my pregnancy was a normal process, and I did not think problems would have happened during the birth or after birth."* (OHCP4)

This finding was greater than the study finding from Nekemte Town, Oromia, Ethiopia, in which only 32.3% of the study participants knew the key danger signs that could have happened during the obstetric period. The variation might be due to geographical differences (Regasa, Markos, Habte & Upashe 2020:8). Related to the source of information to create an awareness of birth preparedness among pregnant women, another study from Ethiopia also mentioned that health professionals were the major source of information to address the key danger signs of obstetric problems for pregnant women during the obstetric period (Zepre & Kaba 2017:9). With regard to the components of the key danger signs during pregnancy, more than half (53.6%) of the pregnant women mentioned that vaginal

bleeding was the most frequently occurring danger sign. This finding is similar to studies from Ethiopia and India, where the participants mentioned vaginal bleeding as a frequently occurring obstetric sign of danger (Gedefa, Bekele, Kitila & Eda, 2023:13; Bhaumik 2019:19). The similarity in these studies might be attributed to the fact that pregnant women can easily observe bleeding.

The FGD participants in this study had some common ground regarding vaginal bleeding as a key danger sign:

*“At the time, I was six months pregnant before this pregnancy; blood mixed with fluid was leaking from my womb. I was afraid of the situation when I came to the health centre. The health centre wrote me a referral paper to the hospital, and I was admitted for more than a month in the hospital. After my problem was treated, I came back home and gave birth in the health centre around my village. Starting from my complicated pregnancy, one of the problems raised during pregnancy was bleeding, a leak of fluid from the womb, and feelings of tiredness.” (OHCP7)*

In this study, 71.2% of the respondents were aware of the key danger signs that can occur during labour time. Among the 71.2% of respondents, 59.5% had an awareness of the most frequently mentioned key danger sign, which was excessive vaginal bleeding. This finding was similar to other research studies conducted by Ehiemere *et al.* (2017:9), where vaginal bleeding is mentioned as a prominent problem by 70.3% of the respondents; Mulugeta *et al* (2020:17), 65.9%; and Azeze *et al.* (2018:16), 73.5% of pregnant women mentioned vaginal bleeding as the most crucial danger signs. The World Health Organisation supported this finding; it revealed that the major complications that caused 80% of maternal deaths were vaginal bleeding, infection during postpartum, and high blood pressure (WHO 2019:19). However, the key danger signs, such as prolonged labour, PROM, high-grade fever, blurred visions, and severe headaches were among the life-threatening key danger signs that were not mentioned by most of the respondents in this study. Mechanisms for increasing pregnant women's awareness of key danger signs must be implemented in ANC settings.



#### **6.3.4 Key factors associated with birth preparedness and the complication readiness practice**

One of the factors that had a significant association with the birth preparedness and complication readiness practice in this finding was the chances of pregnant women having the support of their husbands during obstetric care, such as an ANC visit. The pregnant women who received support from their husbands were 2.2 times more likely to participate in the BPCR actions. This report was positively related to the study finding from the Wolita District, Ethiopia, in which the odds of pregnant women getting support and taking action for birth preparedness were 2.9 times more likely than their counterparts (Awoke, Mekonnen & Areba 2020:20).

Husband support as a contributing factor to planning for birth preparedness was also referred to by the FGD participants as follows:

*“My husband supports me by making suggestions about my pregnancy. Sometimes, he accompanies me to the health institution to attend ANC services. He also helps me by washing the clothes of our children, cleaning the house, and sharing household chores.” (OHCP3)*

Related to the age of the study participants, the age group of pregnant women, 20 to 25, was 1.7 times higher than other age groups in birth preparedness. This result was similar to a study conducted by Tafa, Hailu, Ebrahim, Gebrie, and Wakgari (2018:15), in which the same age group had a significant association with birth preparedness. Being young and open to new perspectives motivated this age group to seek care from health professionals, and having limited family members also gave them enough time to utilise obstetric services frequently.

Pregnant women's awareness of birth preparedness and complication readiness practices were among the core variables that significantly affected the BPCR in this study. This is also related to other previous studies (Wudu & Tesfaye, 2021:13; Tsegaw, Cherkos, Badi & Mihret 2019:10). This might be justified by the fact that pregnant women might have different sources of information during the ANC service or other obstetric care service utilisation from the health workers. The FGD

participant also supported the idea that awareness of birth preparedness is one of the enabling factors for early birth preparedness.

*“In my opinion, early preparation during the early stages of pregnancy is advantageous; instead of having to search for a solution after the problems happen, it is better to plan and prepare early.”* (EHCP1)

## **6.4 INTEGRATION OF RESULTS TO THE MODEL**

### **6.4.1 The Three Delays Model**

The Three Delays model is a vital strategy to decrease maternal and neonatal mortality during emergencies by preventing unnecessary delays during pregnancy, childbirth, and postpartum periods. The first delay is avoiding barriers that hinder women from deciding to seek professional care. These barriers include women's economic status, education, and other social factors. The main problems of the second delay are identifying and reaching the medical facilities. Major hindering factors in the second delay are the physical distance of health institutions and a lack of transportation. The third delay includes receiving inadequate and ineffective care from healthcare professionals, inappropriate care concerning the client's perceived prior experience, and satisfaction and medical management issues (Taddeus & Maine 1994:38).

#### **6.4.1.1 First delay**

This study found that 71% of the study respondents had decided to seek care through a joint decision with their husbands to seek obstetric care services. This finding was lower than the study findings conducted in another part of Ethiopia, in which 89.7% of pregnant women decided jointly with their husbands to seek care during obstetric emergencies (Zepre & Kaba 2017:16).

Related to self-decision-making, 15.4% of pregnant women made decisions alone to seek care during EMOC. This percentage was higher than the study conducted in India, where 10% of pregnant women made the self-decision to seek obstetric

emergency care (Madhukaswar & Shivalli 2017:12), and is lower than the research study findings conducted on pregnant women living in Timor-Leste (South-East Asia), where 21% of pregnant women made the decision alone to seek obstetric care (USAID 2015:24).

Furthermore, based on the above findings elaborated by the FGD participants, it can be concluded that deciding to seek care is a serious problem. P10AH contended:

*“It is considered normal to delay deciding to seek care because of our perception that labour or giving birth is always the right way. Some women stay at home for more than a day or more during labour. The family or the husband do not decide to search for transportation, money, or neighbours to carry the pregnant woman to the health facility until the pregnant woman feels weak. The awareness of our community is still low and not alert to the labouring mother that she needs urgent help to facilitate a normal birth, and most of us did not decide to go early to the health facility.”*

#### **6.4.1.2 Second delay**

One of the reasons for the second delay in pregnant women arriving on time at the health facility is the distance between the home and the facility. In this research study, 16.8% of pregnant women took more than one hour to arrive at the nearest health facility, which is less than the 30% found in other parts of Ethiopia (Zepre & Kaba 2017:4).

The means of communication are crucial to identifying and reaching the health facility. About 79.9% of pregnant women in this research study had personal mobile phones for communication. This result was in line with the study findings in Nepal, in which 80% of pregnant women had mobile phones for communication (Islam *et al.*, 2018:13). About 89.2% of pregnant women in this research study received financial support from their marriage partners for transportation fees. This research finding is supported by the qualitative study in Tanzania, where the discussant

mentioned that most husbands started supporting their wives during pregnancy by saving money for transportation (August *et al* 2015:8).

Distance was mentioned as the main problem in identifying and reaching health facilities. The FGD participant EHC10 mentioned the following statements related to problems in reaching the facility:

*“My resident kebele (small unit administrative structure before district) is far away from the health centre. Travelling on foot takes more than three hours, but accessing the main road takes more than one hour. If the pregnant women faced difficult labour, the neighbours carried the women to the access road or even sometimes to the health centre to save the lives of the mother and the foetus.” (EHCP10)*

This result is consistent with the findings of the views of FGD participants in the Sidamma Zone, Ethiopia, which mentioned that due to the existence of a place where it is hard to reach the health facility, labouring women reach the health facility within two to three days of walking. Labouring women will sometimes give birth or die on the road due to the lack of an accessible road (Kea *et al* 2018:7).

This study's findings indicated that among pregnant women referred to the next facility or hospital for better EMOC, 53% of pregnant women were adversely affected by high transportation costs and scarce transportation. The FGD participant from EHC7 in this study supported the quantitative result by sharing:

*“My home is far away from the health centre. “If it were nearer to me, I would have liked to give birth in the health centre. I had given birth to three of my children in my home; even though I had suffered a lot, I gave birth to my third child at home.”*

The study results reported from Malawi also showed that 39.4% of pregnant women who were given referral orders to hospitals were delayed due to the unaffordable cost of transportation (Mgawadere, Unkels, Kazembe & Van den Broek 2017:17).

### **6.4.1.3 The third delay**

Responding to the problems of the third delay can save lives from life-threatening obstetric complications during referrals and ANC services. This study showed that 32.3% of pregnant women with obstetric complications received treatment after one hour of arriving at the health facility, and 7.1% of pregnant women waited for more than three hours without getting any treatment. As the evidence indicates, for some obstetric complications, the median time interval between the onset of the complication and the death of the mother is extremely short. Death can occur within an hour for some complications like postpartum haemorrhage (WHO, UNICEF, UNFPA & World Bank 2019:21).

Assefa and Berhane (2020:5) from Addis Ababa, Ethiopia, noted that 58.6% of pregnant women who got referral orders due to obstetric complications did not get treatment at the time they arrived at the health facilities. They were delayed for more than thirty minutes to receive treatment. This finding was consistent with the findings of this study in both the quantitative and qualitative parts. According to the FGD participants, most pregnant women did not get treatment at the time of their arrival at the health facility. This made them hate the lifesaving maternal services, as mentioned by FGD discussant AHP8:

*“I am not satisfied with the ANC service provided by the hospital because it is my third day without getting the service. I came here to get a solution to my problem, but I still have not gotten one. The health workers are busy and not giving me the appropriate information when I ask them. If I had money, I would go to a private clinic, but I cannot afford the cost of the service offered by the private clinic.” (AHP8)*

### **6.4.2 Integration of the results to the HBM**

The HBM describes a person's health and conduct regarding a threat perception built on beliefs, including perceived susceptibility to health problems, anticipated severity of the repercussions of health problems, and the advantages of prescribed health behaviours. The model suggests an action cue to benefit when the proper

beliefs are held (Conner & Norman, 2015:3). The researcher relates the result of this study among pregnant women of BPCR practice with HBM as follows:

#### **6.4.2.1 Perceived susceptibility**

In this study, the likelihood of pregnant women developing obstetric complications and the perception of pregnant women about how vulnerable they are to obstetric complications if they fail to prepare for birth preparedness were assessed.

This study identifies the vulnerability of pregnant women to unforeseen danger signs that can harm them. Most pregnant women (68.1%) had an awareness of the key danger signs of obstetric complications that could harm pregnant women. At the same time, the FGD participants mentioned the perceived susceptibility of pregnant women to obstetric danger signs:

*“The problem during labour is being unable to give birth at home due to prolonged labour, which leads to making the mother weak. I remember last year when my brother's wife was pregnant for the first time. Her labour had started, but she did not tell anybody. After that, when the labour became strong, the husband took her to the health centre, where the health centre confirmed that the foetus had become weak. When they arrived in the hospital, the foetus was dead in the womb.” (P6EHC)*

The risk perception awareness of pregnant women in this study is greater than study findings in Nigeria; 58% of study participants were aware of the danger signs of pregnancy (Liyasu *et al* 2019:85).

#### **6.4.2.2 Perceived severity**

In this study, it refers to the severity of the obstetric complications that can lead to a fear of severe pain, disability, and death.

This study revealed that 53% of the respondents perceived severe vaginal bleeding as the most frequently occurring key danger sign of obstetric complications. These finds were lower than the study findings in India, where 71.4% of the participants

perceived severe vaginal bleeding as the most severe danger sign among obstetric danger signs (Kari & Angolkar 2021:9).

The FGD participants in this study also elaborated on their perception of severe vaginal bleeding as the most frequently occurring danger sign of obstetric complications:

*“Bleeding is one of the problems that happens after giving birth. Bleeding is dangerous for most pregnant women. I remembered my neighbour in the countryside; she was sick during her pregnancy, but nobody took her to the health facility. After some days of giving birth at home, she started to bleed. The bleeding did not stop, so the husband took her to the hospital. Finally, she died, leaving her one-week-old neonate alone.” (P4EHC)*

#### **6.4.2.3 Perceived benefit**

The benefit of pregnant women's positive perception of the BPCR practice is found in relation to changing their behaviour to a positive attitude toward reducing obstetric complications. A majority of the pregnant women (91.1%) agreed on the benefit of planning for BPCR ahead of the obstetric danger signs. The FGD participants also mentioned the advantage of BPCR in preventing obstetric danger signs as follows:

*“In my opinion, as I have understood it, early preparation at the early stage of pregnancy is advantageous because instead of searching for a solution when problems arise, it is better to plan early preparation.” (P1EHC)*

This study's findings were similar to those of a qualitative study in Nigeria regarding the perceived benefit of early ANC service. As women received ANC earlier, their awareness of detecting danger signs increased, which prompted them to act for early access to essential emergency care (Sripad *et al* 2019:19).

## **6.5 CONCLUSION**

This explanatory sequential mixed methods research study on strategies to improve the birth preparedness and complication readiness practice among pregnant women attending ANC clinics in the Arsi Zone, Ethiopia, identified useful findings in quantitative and qualitative data analyses. The study assessed the extent to which pregnant women prepared for birth preparedness and complication readiness practices through the research objective set. The variables included in this study were maternal sociodemographic conditions, the previous maternal obstetric history, the level of utilisation of maternal health services, the history of the current pregnancy, the level of birth preparedness, the awareness of birth preparedness, detecting danger signs during the obstetric time, and factors associated with birth preparedness and the complication readiness practice through a bivariate and multivariate logistic regression analysis to test the significant association of independent variables with dependent variables.

Valuable results were obtained from the qualitative parts of the study from the FGDs and in-depth interviews with participants in exploring the perceptions and experiences of pregnant women and health professionals regarding strategies to improve the birth preparedness and complication readiness practice at ANC clinics in Arsi Zone, Ethiopia.

This chapter discussed the integration of the quantitative and qualitative findings. The next chapter will deal with developing strategies to improve BPCR among pregnant women.



## **CHAPTER 7: DEVELOPMENT OF STRATEGIES TO IMPROVE BPCR OF PREGNANT WOMEN ATTENDING ANC CLINIC**

### **7.1 INTRODUCTION**

The birth preparedness and complication readiness practice can make a crucial contribution towards reducing maternal and newborn mortality globally through the timely use of skilled maternal and neonatal care during pregnancy, childbirth, and the postnatal period (JHPIEGO.2004:19). Improving maternal health is one of the World Health Organisation's key priorities by providing evidence based on clinical and programmatic guidelines and providing technical support (WHO 2019:3).

Despite many interventions undertaken to minimise maternal deaths, there is still a high number of maternal deaths in Ethiopia. According to the most recent UN agency report, approximately 14,000 maternal deaths occur each year, and the probability that a 15-year-old female will die eventually from a maternal cause of death is 1 in 52 (FMOHE Permanent Mission to UN, 2019:494).

According to the Ministry of Health of Ethiopia, in 2019, 58% of disability-adjusted life years were due to maternal and newborn conditions. To avert maternal, newborn, and all other health problems in the country, the Ministry of Health Ethiopia launched the Health Sector Transformation Plan II, which serves for the period from 2020 to 2025 as a way of improving the quality of health services (FMOHE 2020:22). This strategy guideline also contributes to improving the effectiveness of birth preparedness and complication readiness practices among pregnant women, which in turn, decreases the maternal and newborn mortality.

### **7.2 STEPS IN STRATEGIES DEVELOPMENT**

The steps in developing these strategies are based on the existing points of view on the BPCR practice in Ethiopia and the need to promote obstetric care services to enhance the BPCR practice. The findings from this study, including the FGDs conducted with pregnant women, in-depth interviews with health professionals, a literature review, information from higher health professionals working in maternal

health services, and leadership programmes at the district and zonal health office level, were also used to prepare the strategies depicted in Figure 6.1 below.

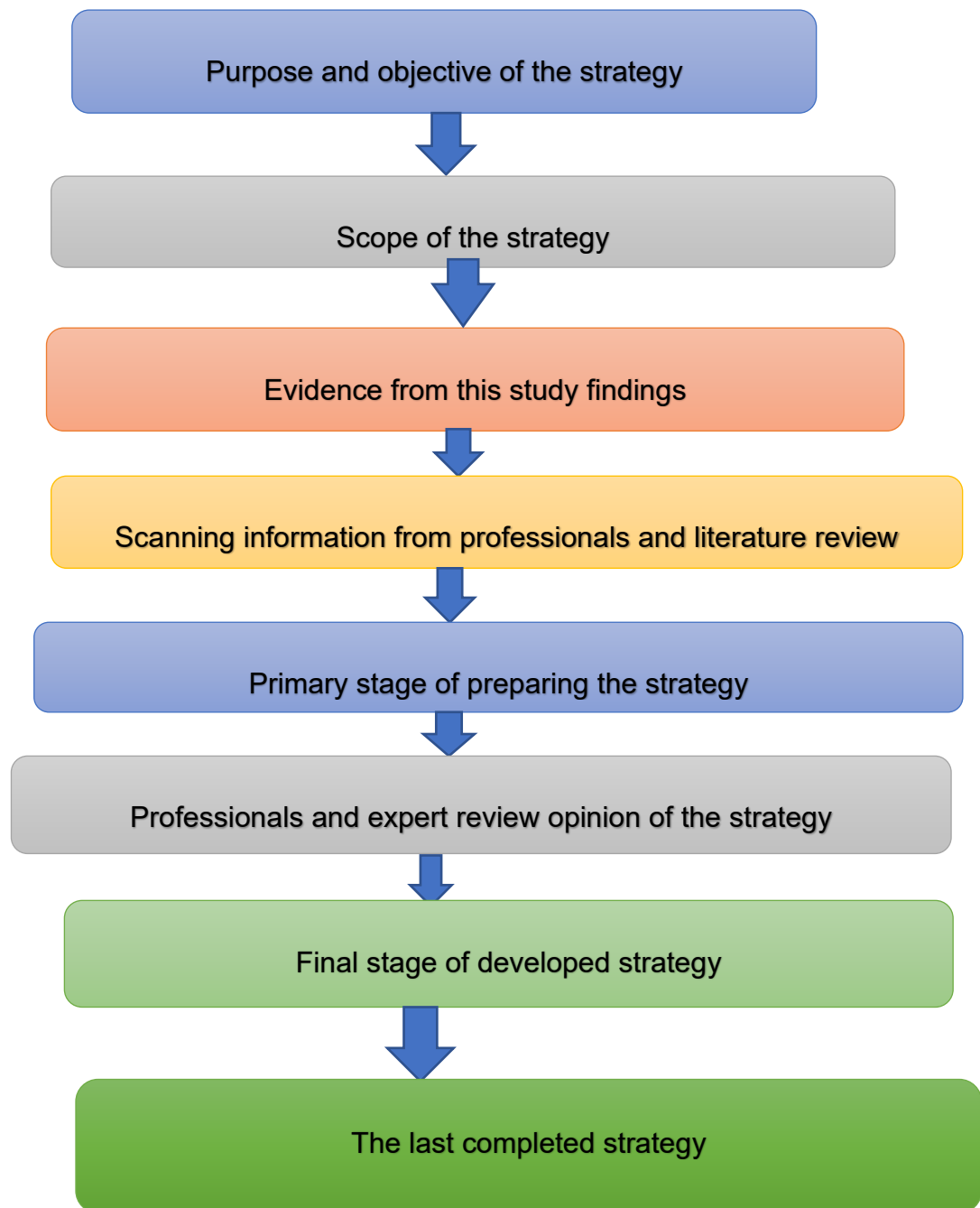


Figure 6.1: Steps in strategies development for this study (developed by researcher).

### **7.3 SCOPE OF APPLICATION OF THE STRATEGIES**

This strategy is used to improve pregnant women's birth preparedness and complication readiness plans by incorporating the strategy into the ANC logbook to fill the gaps in birth preparedness. This document will be used primarily by health professionals working in maternal health services, health institution leaders, higher policymakers, and pregnant women attending ANC care.

### **7.4 PURPOSE OF THE STRATEGY**

This strategy aims to provide a tangible and well-written document on pregnant women's birth preparedness and complication readiness plans in ANC setups in Ethiopia.

### **7.5 OBJECTIVE OF THE STRATEGY**

The prominent objective of this strategy is to explain the strategies to fill the gap and minimise challenges that hinder pregnant women from planning and utilising birth preparedness and complication readiness practices.

To explore the components of pregnant women's birth preparedness and complication readiness practices based on the country's cultural and local context as a strategy to minimise obstetric complications.

### **7.6 THE PRIMARY STAGES OF STRATEGIES**

The stages for the strategy development were focused on the Federal Ministry of Health, regional health offices, health facilities, health professionals, community, family, and individual pregnant women levels.

#### **7.6.1 Federal Ministry of Health level**

**Strategic objective 1:** Making advanced policies that assist the pregnant woman, her family, and the community to be well prepared during all stages of the pregnancy to prevent obstetric emergencies.

#### **Activities**

1. Discuss and revise the ANC Standard Operating Procedures (SOP) materials, especially emphasising the currently available ANC logbook, which lacks a birth preparedness plan. Every pregnant woman should have birth preparedness plans starting from the early gestational age of pregnancy.
2. The ANC registration logbook is expected to incorporate the following birth preparedness plan components:
  - i. Identify the place for giving birth
  - ii. Means of transportation during an emergency
  - iii. Saving money for different types of expenditure
  - iv. Identify a skilled birth attendant
  - v. Identify a blood donor
  - vi. Clothes for the newborn
  - vii. Means of communication channels: personal or husband's mobile phone number as means of contact
3. Producing and disseminating IEC and BCC materials in different languages on the danger signs of pregnancy, childbirth, and during the first two days after birth.
4. Developing the standard guideline on male involvement in birth preparedness plans to increase early decision-making to avoid delays during referrals for EMO.
5. Sensitisation training of health professionals on how to implement the revised SOP ANC and birth preparedness plan.
6. Preparing a community birth preparedness training manual for health professionals and health extension workers to enhance community awareness of birth preparedness and complication readiness practices.
7. Giving priority to remote areas, such as ambulances and emergency drugs, during resource allocation.

## 7.6.2 Reginal health office level

**Strategic objective 2:** Building strong and continuous monitoring and evaluation mechanisms to check the success of a birth preparedness programme.

The in-depth interview conducted among health professionals indicated that the BPCRPs activities were not included in the monthly report of MCH services and in the ANC log book to monitor on a monthly basis:

*“We have no plan and registration book to identify the individuals who were prepared for birth preparedness and complication readiness practice. We are only informing the clients orally of the importance of BPCRPs, which is not included in the monthly report formats. We do not have a number that indicates how many of them were prepared for birth preparedness.” (AHKII1)*

### Activities

1. Incorporating the birth preparedness plan in the monthly report of the health facility.
2. Conducting supportive supervision annually to identify the success and challenges of the birth preparedness programme.
3. The issue of birth preparedness plans for pregnant women and the achievements of the health institution should be raised during the review meetings as one of the programmes that contribute to decreasing maternal and newborn mortality.

**Strategic objective 3:** Building infrastructure helps promote the utilisation of birth preparedness and complication readiness actions by pregnant women.

The FGD participant complained that a lack of transportation and the long distance from the health institution forced her to give birth at home:

*“My home is far away from the health centre; if it had been near me, I would have given birth at the health centre. I gave birth to three of my children in my home, even if I suffered a lot.” (P7EHC)*

### **Activities**

1. The major periods of risk of death for pregnant women and the newborn are the first twenty-four hours after childbirth. Therefore, building maternity waiting areas could prevent obstetric complications due to the second delay.
2. Intersectoral collaboration with the regional road authority and another responsible organisation is planned to construct roads and other infrastructure for places with long distances from referral hospitals.
3. Planning to build standard health centres that provide twenty-four-hour EMOC services like caesarean sections and other lifesaving procedures for the mother and the newborn during an obstetric emergency.
4. Making the ANC and delivery rooms comfortable for pregnant women. Building rooms that safeguard the privacy of the woman during procedures and counselling services.

**Strategy objective 4:** Recruiting health professionals according to national human resource standard guidelines to prevent a shortage of midwives, and increase client satisfaction.

A shortage of professionals in implementing the BPCRCP was one of the challenges raised by KII health professionals:

*“One of the major challenges in the implementation of BPCRCP in our hospital is the shortage of professionals. The large daily flow of pregnant women is hindering our abilities to address the benefits of BPCRCP to each client, and as a result of this, there is a shortage of time for the health professionals.” (KII2AH)*

## Activities

1. Assigning an appropriate number of midwives to provide a full range of quality care during the obstetric care practice.
2. Assigning competent health professionals who are responsible and accountable for the given task.
3. Giving rewards and incentives to hard-working health professionals to prevent their attrition.

### 7.6.3 Health facility level

**Strategic objective 5:** Integrating the maternal health service programme with relevant organisations and local government bodies to increase pregnant women's utilisation of maternal health services and birth preparedness.

In an in-depth interview, a participant from Health Centre C mentioned linking pregnant women with different local organisations to increase utilisation of BPCR:

*“Linking the pregnant women living far from the health centre to health extension workers, WHDA, local NGOs working on maternal health, and women's association leaders in order to access information about BPCR and other obstetric services is very useful.” (KIIPHC)*

## Activities

1. Creating a favourable environment for pregnant women living in areas far from health facilities to attend maternal health services through the local women's association leader and cabinet member.
2. Strengthening the health extension workers (HEW) and applying strong monitoring and supportive supervision in order to apply one of the 18 health extension packages ANC at the village level and auditing them on a monthly report to identify their achievements and the challenges encountered.

3. Establish a Women Health Development Army (WHDA) at the Gote level (the smallest household number at the village level of political administration in the Oromia region) to identify and reach all pregnant women and increase their birth preparedness plans.
4. Using local NGOs (non-government organisations) that are working on health-related issues to integrate the birth preparedness programme into their routine activities by signing a Memorandum of Understanding (MOU).

**Strategic Objective 6:** Conducting health promotion activities IEC and BCC on routine health facility daily programmes and in different organisations to increase the awareness of pregnant women's birth preparedness and complication readiness practices.

Respondents' awareness of the major components of BPCR among pregnant women in this study was significantly low; for instance, only 24.3% of respondents are familiar with saving money for emergencies, 19.1% prepare money for transportation, and 5.9% identify skilled birth attendants.

### **Activities**

1. Appointing medical personnel to educate expectant mothers and post a daily health education programme regarding birth preparedness as part of an ordinary medical facility service.
2. Duplicating IEC and BCC teaching aid materials like leaflets and booklets about birth preparedness and distributing them to pregnant women with reading proficiency.
3. Preparing posters about birth preparedness with a minimum of two local languages to increase understanding and awareness of the women and posting them in public places like markets.
4. Organising youth female clubs in schools and arranging volunteers and training platforms about birth preparedness and complication readiness practices for pregnant women to sensitise the pregnant women at home or in their village.



5. Establishing a pregnant women's team and giving training for pregnant women to teach other pregnant women about birth preparedness and creating experience sharing opportunities to share their experiences about challenges during their pregnancy and the possible solutions.

**Strategic objective 7:** Minimising cultural barriers that prevent pregnant women from utilising maternal health services.

Key informant in-depth interview participants identified some cultural barriers:

*“The maternal-side challenge of birth preparedness is that most pregnant women come to the hospital when a complication has reached a severe stage. We have tried to inform them to prepare ahead of the problem, but they don’t do that due to cultural and economic matters. Some are reluctant due to a lack of understanding of the benefits of birth preparedness.” (P2KIIAH)*

### **Activities**

1. Identifying harmful and useful traditional practices in the catchment area of the health facility, promoting useful practices, and warning about the effects of harmful traditional practices to minimise and eradicate them over time.
2. Giving training to local advocacy groups like religious leaders, traditional birth attendants, traditional healers, and informal leaders like the elderly about the disadvantages of harmful culture in relation to birth preparedness and the utilisation of maternal healthcare services.
3. Discouraging harmful traditional practices like home delivery without a skilled birth attendant, shaking women for the retained placenta, and massaging the abdomen of the gravid uterus at the time of prolonged labour.
4. Promoting useful traditional practices such as assisting pregnant women with household activities, home-based postnatal care, visiting the women by preparing food to replace blood lost during birth, and other economic support.

5. Conducting further research on the cultural barriers to utilising maternal health services in the region to identify the root causes and implement evidence-based solutions for the identified root causes.

**Strategic objective 8:** Facilitating means of communication and transportation for pregnant women in need of EMOC.

In this study, pregnant women with a mobile phone were two times more likely to plan BPCR and utilise obstetric health services than those without a mobile phone.

### **Activities**

1. Exchanging the mobile numbers of pregnant women or the husband's mobile numbers with midwives to get help during an emergency.
2. Posting the phone number of the health centre ambulance service in the ANC room and other places to communicate in need of emergency transportation services.
3. Ensuring the ambulance is on standby for emergency calls to prevent maternal delays in emergencies.
4. Giving transportation priority to pregnant women living far from the health facility.
5. Allocating an adequate budget for an ambulance maintenance service and providing enough fuel to ensure a sustainable transportation service for obstetrics emergencies.
6. Prohibition of using the assigned ambulance for EMOC for unrelated purposes. Using it during an emergency obstetric service to prevent a shortage of transportation.
7. Linking the pregnant women with health extension workers working at village health posts to get counselling services to avoid the three maternal delays.

**Strategic objective 9:** Constructing a maternity waiting area for pregnant women living far from the health facility.

Most of the FGD participants in this study mentioned the importance of maternity waiting areas for pregnant women living far away from health facilities:

*“The health institution has to build a maternity waiting area with furnished materials for pregnant women from far distances. The maternity waiting area helps pregnant women stay until they give birth. This helps to prevent complications during the labour, delivery, and postpartum period.” (P6EHC)*

### **Activities**

1. Furnishing the maternity waiting room according to the local housing style to make it comfortable for pregnant women.
2. Assigning competent health professionals to give follow-up care and monitor the progress of the pregnancy.
3. Introduce the newly-arrived pregnant women to those previously waiting in the maternity waiting room to build cohesive relationships with each other and share their experiences.

**Strategic objective 10:** Increase health insurance coverage in all villages around the health facility to overcome the economic problems during EMOC.

The majority of the FGD participants in this study experienced a scarcity of money when they needed EMOC:

*“The shortage of money leads to a lack of transportation and sometimes a lack of food and other basic household needs; therefore, it endangers the lives of pregnant women, which sometimes escalates death. To save the lives of women and newborns, the government should provide more services, including a sustainable food supply and strengthening the healthcare finance system.” (P6OHC)*

## Activities

1. Conducting a community-based awareness-creation programme on the benefits of having health insurance with a small payment and getting many benefits.
2. Selecting harvesting time to collect money for health insurance from the rural residents. The main reason for this is that farmers get more money during this time.
3. Replacing the long and bureaucratic process of the health insurance system with simple and easy methods.

**Strategic objective 11:** Implementing a one-stop-shop health service for obstetric care to increase service satisfaction and avoid time wastage.

The FGD participants in this study complained about the long waiting hours and scattered services during their ANC visits:

*“When I came for ANC service at this hospital, it was crowded with pregnant women, and all of them complained about the service given and mentioned that it was not satisfying. The queue is too long to get the service because the service is given in one room, and the laboratory and pharmacy are far away from the ANC clinic; therefore, I suggest adding an additional room to decrease the complaints.” (P3AHP)*

## Activities

1. Identify the service to be integrated.
2. Training the health workers on a one-stop-shop maternal health service.
3. Setting the location where the service is integrated.
4. Preparing signposts to show the location and direction of the service room so it can be identified easily.

5. Receiving comments and complaints from pregnant women to identify and address the challenges and make the service more convenient based on the client's interest.
6. Ensure the programme's sustainability through a monitoring and evaluation process, to check whether it meets the pre-set objectives. This helps to minimise the dissatisfaction pregnant women have with obstetric care.

**Strategic objective 12:** Establish a strong referral linkage between the HEW, health centre, and hospitals.

The only solution for the women who face complicated emergency obstetric complications is the urgent referral to a higher health facility to get better treatment. Most of the health centres in Ethiopia write a referral order for a mother with an obstetric emergency due to a lack of skilled professionals and a poor setup to manage the cases. Therefore, strengthening the referral system with effective communication helps minimise the delay for mothers to seek care before life-threatening conditions occur.

Twelve percent of pregnant women in this study who were referred to a hospital for further treatment of an obstetric emergency could not identify the exact place to which they had been referred due to a lack of adequate information.

### **Activities**

1. Preparing an explanatory referral format containing the referral's details, such as what care was given and providing feedback on what kind of care and procedures were done at the referral health facility.
2. Linking a health professional to the referral places with a mobile phone to facilitate urgent care.
3. Creating systems for reporting the interval between when the referred pregnant women arrived at the referral institution and when they received the service.
4. Identifying the means of monitoring and evaluating the referral process's strengths and weaknesses.

#### 7.6.4 Health professionals' level

**Strategic objective 13:** Establish mother-friendly obstetric care services to increase the interest of pregnant women in seeking maternal care services and to plan birth preparedness.

The FGD participants in this study revealed that some of the health professionals who were working in the ANC clinic had no ethical manners:

*“Some of the health workers do not have a respectful approach to pregnant women during ANC visits. They don't answer our questions in a polite manner or with a humble approach. It is better to give training on good conduct and how to approach pregnant women with a smile.” (P2AHP)*

#### Activities

1. Addressing an adequate welcome to each pregnant woman coming for ANC or other maternal care.
2. Greeting and calling the pregnant women by their names to build good relationships with pregnant women.
3. Show empathic behaviour, treat them kindly, make them feel free to express what they feel, and give them a chance to ask questions.
4. Maintaining the privacy of the pregnant women, ensuring confidentiality, and considering culture, social value, and interest during the care and counselling services.
5. Giving informed consent before counselling or conducting any procedure to win their trust.
6. Training health professionals on professional ethics regarding how to approach pregnant women during the maternal health service.

**Strategic objective 14:** Produce competent, skilled, passionate health professionals and provide immediate solutions during EMOC to avoid missed treatments and delays for urgent referrals due to missed diagnoses.

The key informant in the in-depth interview mentioned the importance of producing competent health professionals by providing on-the-job training and other training:

*“It’s very important to give in-service training and off-site training for health professionals on BPCR and basic obstetric care to improve their knowledge and skills and to provide quality maternal health services.” (P2EHC)*

### **Activities**

1. Conducting a sustainable in-service training programme on how to identify obstetric danger signs, counselling skills on birth preparedness, and CRC (compassionate, respectful, and caring) of the clients.
2. Using treatment protocols like standard operating procedures (SOP) and national guidelines whenever treating or giving EMOC.
3. Establishing a mini library in every health facility to enhance the knowledge and skills of health professionals in managing obstetric emergencies based on tangible scientific knowledge.
4. Bringing health professionals up-to-date and conscious every year; thus, a competency test should be required to evaluate the knowledge and abilities of the health professionals. Those who fail the competency test must retake it until they pass. In this poll, most health workers were not up to date on obstetric care and delivery readiness.

**Strategic objective 16:** Increasing the communication skills of health professionals by giving training to foster good relationships, acquiring ways of handling pregnant women during ANC, and planning BPCR actions.

### **Activities**

1. Conducting training on two-way (interpersonal communication) skills for health professionals to fill the gap in client handling during ANC and planning for birth preparedness. These gaps were observed during the FGDs among the pregnant women.

2. It is important to give practice-based training in the form of role-play during the training to practice with the trainees.
3. Assessing the communication skills of health professionals with pregnant women after training to identify the progress and gaps in communication skills.
4. Preparing a communication handbook for the health professionals to improve their skills in communicating with the client.

**Strategic objective 16:** Improving the punctuality and time management of health professionals to prevent the complaints of pregnant women during their visits to health facilities.

Lack of starting ANC services timely by health professionals was raised as one of the issues that hinder pregnant women from attending ANC services and BPCR as follows by FGD participants:

*“The distance and duration of the ANC service can affect pregnant women's utilisation of ANC service. Since most pregnant women are housewives and are occupied with housework, they want a fast service that does not take long. Getting the service promptly is very difficult; sometimes, they give an appointment for the next day. Health professionals working at the ANC service do not start their work on time. These are the issues that prevent pregnant women from using the ANC service.” (P9AH)*

### **Activities**

1. Monitoring the health professionals regularly and checking whether they are starting their daily tasks on time.
2. In the study area, all the health facilities provided a 24-hour or day and night service, but gaps were observed between the time of exchange of the health professions during the night and morning hours. A single minute has the potential to save the lives of pregnant women in an emergency. Therefore, preparing a system to monitor the health professionals between the night duty and day duty exchanges is better.



3. Posting the duration of time for one pregnant woman to complete her assessment during ANC, including other procedures, is essential.
4. Giving priority to pregnant women who come from far-off rural areas.

### **7.6.5 Individual pregnant women level**

**Strategic objective 17:** Encouraging women to discuss their pregnancy with their husbands or partners to get support throughout all the stages of pregnancy and plan birth preparedness.

Among the determinant factors that enable pregnant women to utilise BPCR, husband support for pregnant women during their pregnancy is one of them. In this study, pregnant women who had husband support during their pregnancy were 2.2 times more likely to plan BPCR than pregnant women who did not get husband support during their pregnancy period.

#### **Activities**

1. Most pregnant women in Ethiopian rural areas did not involve their partners in planning for the birth. The woman's husband was not involved in birth preparation because she did not tell him about her pregnancy at an early stage (Sufian *et al* 2022:10). Therefore, one of the solutions to increasing the participation of women in birth BPCR is implementing counselling services with their husbands during ANC and other maternal care service utilisation.
2. Preparing invitation letters by the health facility for their husbands to come together during her ANC visit to get a counselling service on BPCR.
3. Organising a male conference at the village level to create awareness of BPCR to support their pregnant partner.

**Strategic objective 18:** Empowering pregnant women to generate money for BPCR.

Most of the pregnant women in Ethiopia were housewives. Therefore, they experienced a shortage of money to utilise obstetric care, and they were unable to

afford to pay for the medical, drug, and transportation expenses when obstetric complications were encountered. The findings in this research, both quantitative and qualitative, revealed that the scarcity of money prohibited pregnant women from utilising the ANC services and the PBCR.

### **Activities**

1. Linking pregnant women with microfinance organisations to support small-scale income-generating activities, such as dairy and poultry products at the household level.
2. Saving money when planning to be pregnant.
3. Being a member of health insurance at a nearby health facility to get payment for health insurance during EMOC and other medical services.
4. Participating in social organisations like Ekub and Edir as a means of saving and getting an income.

**Strategic objective 19:** Providing sustainable information on the benefits of birth preparedness and complication readiness practice to pregnant women, which helps pregnant women develop a positive perception towards birth preparedness for safe pregnancy and birth.

The key informant participant in this study suggested that giving sustainable health education on ANC and BPCR benefits can increase the utilisation of the service by pregnant women:

*“Education information communication (IEC) and behavioural change communication (BCC) activities will be conducted in all areas. These areas include health institutions, family level, and community level.” (P2EHC)*

### **Activities**

1. Counselling service for all pregnant women attending ANC clinics in all health facilities in Ethiopia to plan birth preparedness.

2. Encouraging pregnant women to participate in discussion and experience-sharing forums between pregnant women at the health facility or village level.
3. Assess pregnant women's individual birth preparedness plans at each ANC visit to identify which components of birth preparedness she was prepared.
4. Reminding the pregnant woman to take precautions, especially around her third trimester of pregnancy, including danger signs during labour, birth, and the first two days postpartum.
5. Developing pregnant women's self-confidence and self-decision-making power to detect danger signs that need EMOC without delays.

### **7.6.6 Community level**

**Strategic objective 20:** Increasing community participation in birth preparedness and complication readiness practices.

In the rural areas of Ethiopia, where there is a pervasive inaccessibility of health facilities and roads for transportation, the community carries pregnant women with prolonged labour and other emergency obstetric cases long distances with traditional beds to health facilities. Therefore, the participation of the community in the birth preparedness and complication readiness practices of pregnant women has a significant role in minimising a large number of problems.

Participants in the FGDs in this research study revealed that community participation in birth preparedness and complication readiness practice is mandatory to increase pregnant women's awareness of the importance of BPCR.

*“The community or the neighbours help women by contributing money when a shortage of money is encountered for transportation. Helping the labouring woman if she faced a delay in giving birth at home by carrying her in a group to the health facility when there is no transportation.” (P7AHP)*

## **Activities**

1. Creating an awareness of the components of birth preparedness in the community to increase their participation and get an immediate solution for an obstetric emergency.
2. Planning community-based conferences on birth preparedness and complication readiness practices.
3. Addressing issues in providing care to the mother and the newborn.
4. Emphasising the importance of the mother in the household, if the family or the community loses the mother due to birth complications, the family and the community lose her contribution to childcare, family care, income generation, and other crucial activities.
5. Discussing the present infrastructure problems with the district and health facility officials to get sustainable solutions to prevent maternal delays in EMOC.
6. Establishing teams that organise birth preparedness and complication readiness practice at the family and community level to include the whole family.
7. Initiating the community to identify the challenges of birth preparedness and complication readiness practices at the community level and give them a chance to suggest possible solutions for the identified problems at the community level.
8. Implementing co-ordinated solutions at the community, family, and health facility levels to problems with birth readiness and complication readiness practices that the community has prioritised.

### **7.6.7 Monitoring and evaluation**

The health information system (HIS) in Ethiopia's healthcare system helps to provide equitable quality healthcare services through the proper use of organised data in service provision, planning, performance monitoring, evaluation, and evidence-based decision-making. Following the HIS in 2008, the number of health indicators was 108, then 122 in 2014, and 131 since 2017 after the HIS was revised, but some of the important indicators like birth preparedness and

complication readiness practice among pregnant women are not included in the list of HIS indicators (MOHE, 2020:7).

In the HIS, through the daily work of delivery care, the way of recording the data of individual clients in ANC was on ANC cards, tally sheets, and log books. Selected data were extracted from these records, aggregated on tally sheets or counted from registers, and then consolidated on monthly paper-based report forms distributed to the health system with further aggregation, analysis, and use at district, province, and national levels (WHO 2021:10). The birth preparedness and complication readiness plans of the pregnant women did not include all the above-mentioned WHO report forms. This study suggests that the following monitoring, evaluation, and indicators be added to the HIS of the WHO and the HIS of the Ministry of Health in Ethiopia:

### **Indicators**

1. The number of pregnant women who plan for birth preparedness and complication readiness practices among women attending ANC care in their respective health facilities, hospitals, health centres, and health posts.
2. The number of pregnant women who plan for the major components of birth preparedness and complication readiness practices among the pregnant women who plan birth preparedness and complication readiness practice.
3. The number of pregnant women who identified skilled birth attendants among the pregnant women who planned BPCR.
4. The number of pregnant women who saved money to use during EMOC among pregnant women who plan BPCR.
5. The number of pregnant women who identified the birthplace for the current pregnancy.
6. The number of pregnant women who identified means of transportation during EMOC among pregnant women who plan BPCR.
7. The number of pregnant women who identified blood donors during EMOC among pregnant women who plan BPCR.
8. The number of pregnant women able to identify obstetric danger signs among the pregnant women who attend the ANC clinic in the health facility.

9. The number of pregnant women who identified obstetric danger signs during pregnancy among pregnant women who identify obstetric danger signs.
10. The number of pregnant women who identified obstetric danger signs during childbirth.
11. The number of pregnant women who identified obstetric danger signs during the first two days of the postpartum period among pregnant women who identified obstetric danger signs.

### 7.6.8 Validation of the strategies

This strategy was validated to confirm its acceptability and feasible qualities. The temporary strategy was distributed to several professionals in maternity and child healthcare. The reviewers were specifically chosen based on their depth of knowledge regarding this strategy.

A health centre MCH care service co-ordinator, a district MCH service expert, a zonal MCH care team leader, experienced midwives currently working in obstetric health services, and one associate professor of reproductive and family health participated in the validation of the strategy. A printed hard copy of the strategy was given to each expert, and face-to-face discussions were also held with each reviewer to understand their expertise and opinions. The strategy included all parts of the strategies to allow participants to provide specific input and validation, the strategies.

**Table 7.1: Evaluators' professional background**

<b>S. No</b>	<b>Qualification</b>	<b>Current work</b>	<b>Year of experience</b>
1	BSC	PHCU MCH co-ordinators	15+
2	MPH	District HO MCH expert	10+
3	MPH	Zonal MCH team leader	15+
4	MD/MPH/RH/Associate prof	University professor and consultant	15+

All the reviewers provided feedback on the settled score-based criteria. To assess the validity of the strategies, the researcher prepared a checklist based on a Likert scale to measure the degree to which the respondents agreed or disagreed with the contents of the strategies.

1. Strongly agree 2. Agree 3. Strongly disagree 4. Disagree (see Table 7.2).

**Table 7.2: Assessment tools for validation of the strategy by experts**

Criteria	Score			
	Strongly agree	Agree	Strongly disagree	Disagree
Obvious and presentation Simple to understand, clear, not sophisticated				
Specificity Focus on developing to improve BPCR				
Reliability Based on the reality that the strategies will be used in a sustainable manner by health professionals, facility programme leaders, and other officials				
Effectiveness The strategies address the need and solves the difficulties in BPCR of pregnant women				
Validity Based on this research study, the findings analysed and described in Chapter 4				

Criteria	Score			
	Strongly agree	Agree	Strongly disagree	Disagree
<b>Relevance</b> Developing strategies to improve the BPCR of pregnant women is mandatory to minimise maternal and newborn deaths				
<b>Applicability</b> The beneficiaries are clearly depicted, as mentioned in the scope of the strategies				
<b>Acceptability</b> Based on known facts related to the existing national strategies				
<b>Achievability</b> The strategies will be implemented by the target group mentioned in this research study				
<b>Utilisation review</b> Measuring the outcome of the strategies based on indicators settled to measure the strategies				

The total score for each strategy was 50. The researcher considered the strategy scoring 38 or more as being at an acceptable level of evaluation to develop strategies to improve BPCR in pregnant women.

The score mentioned above represented 76% of the acceptance level given by evaluators to implement the strategy guide. The strategies were categorised into six main strategies and 20 detailed strategic objectives, which describe the contents of the strategy. According to the evaluators' records, the minimum score was 40.5, and the maximum mean score was 45. Therefore, none of the evaluators scored less than 38 as indicated in Table 7.3.



**Table 7.3: Evaluators score for each strategy**

Strategies	Evaluator's score				
	Evaluator 1	Evaluator 2	Evaluator 3	Evaluator 4	Mean score
Strategy 1	42	46	48	39	43.75
Strategy 2	39	43	41	40	40.75
Strategy 3	44	39	43	41	41.75
Strategy 4	39	38	44	45	41.5
Strategy 5	43	41	40	44	42
Strategy 6	45	47	42	46	45

## **7.7 CONCLUSION**

The BPCR of pregnant women should be given global emphasis as a strategy to minimise maternal and newborn deaths. According to the WHO (2015:9), BPCR are interventions included by WHO as vital components of the ANC package to protect the mother and newborn from pregnancy and birth complications. This strategy was developed using different materials, such as the findings from this research, the opinions of health professionals and pregnant women, and an extensive literature review, as input. Finally, it was reviewed by senior health professionals and experts in maternal healthcare. The strategy can be used as a technical guideline to implement birth preparedness and complication readiness practices effectively for pregnant women attending ANC services in Ethiopia.

The previous chapter discussed developing strategies to improve the BPCR of pregnant women. Chapter 8 presents the conclusion and recommendations.

## CHAPTER 8: CONCLUSION AND RECOMMENDATIONS

### 8.1 INTRODUCTION

This research aimed to develop strategies to improve birth preparedness and complication readiness practices among pregnant women attending an ANC clinic in the Arsi Zone, Ethiopia. The previous study's findings revealed that a lack of early preparedness for urgent action to avert obstetric complications was a significant challenge in Ethiopia and was contributing to maternal delays in receiving lifesaving obstetric care (Asrat, Baraki, Assefa & Alemkere 2019:1).

According to the WHO, women die because of complications during pregnancy and childbirth. Most of the complications are preventable or treatable and can be managed as part of women's healthcare through interventions like early birth preparedness and complication readiness actions. Most of the complications that account for nearly 75% of all maternal deaths are severe bleeding, infection, and pregnancy-induced hypertension complications due to delay in seeking care (WHO 2017:30).

Ethiopia is one of the developing countries experiencing high numbers of maternal deaths. Despite the impressive progress that has been made, ensuring the timely arrival and health service quality remains a challenge (USAID, Ethiopia, 2020:1). These research findings indicated that 92% of pregnant women attended one ANC visit, but a limited number (23.3%) attended the fourth ANC visit, which is below the requirement of the WHO. In relation to obstetric complications, 30.2% of pregnant women encountered different obstetric complications. Of the 30.2% that faced prolonged labour, 29.3% encountered severe vaginal bleeding after childbirth, 41% were referred to the next facility for better care, but 53% were delayed due to transportation, and 16.2% were delayed due to a shortage of money. Most pregnant women (85.7%) stated that they were prepared for birth for the current pregnancy to avoid complications, with the majority (78% and 63%, respectively) prepared with regard to food items used during the birth time and purchasing clothes for the newborn. Concerning the major life-saving components of birth preparedness, only 38.9% of pregnant women managed to save money,

18% identified skilled birth attendants, and 16% saved for the means of transportation.

This study further revealed the determinant factors significantly associated with birth preparedness and complication readiness actions, including age at first pregnancy, residency, owning a mobile phone, husband support during pregnancy, relative support on household activities, pregnant women's awareness of birth preparedness, and pregnant women's detection of danger signs of pregnancy. This chapter deals with the most important research points of view, including the research method, design, research findings summary, conclusions, recommendations, study contribution, strengths, and limitations of the study.

## **8.2 RESEARCH DESIGN AND METHODS**

This study used a sequential explanatory mixed study design. This design was selected to assess the development of strategies to improve birth preparedness and complication readiness practices to provide a comprehensive analysis of the research problems and to explain the findings in a detailed manner. The quantitative data related to the development of strategies to improve birth preparedness were collected from two hospitals and three health centres from 1014 pregnant women who attended the ANC clinic. A systematic random sampling technique was employed using the lottery method to select two hospitals and three health centres from health institutions in the Arsi Zone. Based on the information obtained from health institutions and the six-month flow ANC attendants logbook data, the sampled data were allocated proportionally for each hospital and health centre in relation to the number of pregnant women expected to attend an ANC visit. The first client was selected randomly, and the sample interval until the required 1014 ANC attendant study participant pregnant women were recruited. Structured and semi-structured interviewer-administered questions were used to assess the quantitative parts of the study through pre-stetted inclusion criteria. During data collection, each questionnaire was checked for completeness by supervisors on the spot. Then, the quantitative data were entered into Epi info version 3.5.4 and transferred to SPSS version 26 for further cleaning and analysis of the results.

The qualitative parts of the study encompassed three sessions of FGD with pregnant women to explore the cultural and social norms, the experience of obstetric service utilisation, the barriers to utilising the service, and the development of strategies to improve birth preparedness. Nine sessions of in-depth interviews were conducted with health professionals providing obstetric care services, and programme co-ordinators participated in identifying the challenges in the intervention of birth preparedness, maternal, professional, and institutional barriers, mechanisms to improve the birth preparedness and complication readiness of pregnant women in the facility, and at the community level. An inductive thematic analysis approach was used as a reduction and analysis strategy to help code, categorise, and summarise and enable the researcher to analyse the basic concepts of gathered data.

### **8.3 SUMMARY AND INTERPRETATION OF THE RESEARCH RESULTS**

The data collection incorporated two hospitals and three health centres to select 1014 pregnant women as respondents for the quantitative part of the study. Most of the study participants, 251 (25%), were from the Kersa Hospital, located in a semi-urban area of the district; 250 (24.6%) were from the Asella Hospital, located in the capital city of the Zonal Town; 189 (18.6%) were from the Eteya Health Centre, located in the semi-urban town of the district, 164 (16.2%) were from the semi-urban health centre, found in the Huruta District Town, and 158 (15.6%) were from the semi-urban Ogolcho Health Centre, located in the district town. Related to the qualitative parts of the study, the three FGDs with 36 pregnant women and nine in-depth interviews with health professionals from Assela Hospital, Eteyaa Health Centre, and Ogolcho Health Centre were conducted to triangulate the quantitative study with the qualitative study findings.

#### **8.3.1 Summary of sociodemographic findings of the study respondents**

The ages of the pregnant women ranged from 15 to 44 years, with a mean age of 27±6 years old standard deviation. The majority (37%) of pregnant women were between the ages of 25 and 29. The majority of the pregnant women (93.8%) were married, and 13.3% of the pregnant women and 27% of the husbands of the

pregnant women could not read and write, respectively. The majority (67.8%) of the pregnant women's occupations were housewives, and 42.9% of the pregnant women's husbands were farmers. The average monthly income (65.1%) of the pregnant women in this study was less than 500 ETB (USD 10). The means of electronic communication in the study area were mobile phones, and 79.9% of the pregnant women had their own mobile phones. Related to the family size of the pregnant women, 66% had a family size of one to four, and the minority (2.5%) of the study participants had more than 10 family members.

The minimum age at first pregnancy was 14 years, and the maximum was 36 years. Approximately 39.3% of the pregnant women conceived their first pregnancy at the age of less than 19 years, and their pregnancies were considered teenage pregnancies. The minimum number of pregnancies for pregnant women was one, and the maximum was 10. The mean number of pregnancies of the study respondents were  $3.1 \pm 1.93$  S.D. Two hundred and five (25.8%) of pregnant women had had a minimum of one abortion preceding this survey, and 73 (7.2%) had a stillbirth.

### **8.3.2 Summary of the health service utilisation by pregnant women**

Most 720 (71%) of the study respondents decided jointly with their husbands to seek obstetric care in a health facility. The accessibility of the health facility was an important factor in utilising obstetric care during early pregnancy. Among the study participants, 170 (16.8%) pregnant women took more than one hour to reach the nearby health facility. Pregnant women need the support of their husbands and relatives to minimise complications during pregnancy. In this study, the majority of the pregnant women, 904 (89.2%), received different kinds of support from their husbands. Approximately 575 (56.7%) of the pregnant women were supported by their relatives in household activities and childcare when they visited the healthcare facilities.

The majority of the pregnant women, 729 (92%), had made at least one ANC visit, and 70 (23.3%) had four visits. Four hundred and sixty-eight (64.1%) pregnant women attended their ANC visit in government health centres, and 23 (3.4%)

received ANC at a private hospital. Three hundred and fifty-seven (45.1%) of the pregnant women gave birth at a governmental health centre, and 22 (2.8%) gave birth at a private hospital. The majority of the pregnant women, 480 (60.6%), were attended by midwives during delivery, and 102 (12.9%) were assisted by doctors.

### **8.3.3 Summary of the obstetric complications encountered by pregnant women during a previous birth**

Of the 792 (78.1%) who had a history of a previous pregnancy preceding this survey, 239 (30.2%) pregnant women had encountered different obstetric complications. The majority, 72 (30.1%), had prolonged labour, and 70 (29.3%) had excessive vaginal bleeding. This finding is supported by the qualitative FGD participants who reported obstetric complications during the birth or postpartum period, such as severe vaginal bleeding and prolonged labour.

### **8.3.4 Referral to a higher health facility**

Of the 239 (30.2%) pregnant women with obstetric complications, 99 (41.4%) were referred to higher institutions for better care. Among 55 (55.5%) of the referred pregnant women, the decision to accept the referral was made by their husbands. This result was also supported by the FGD participants, who mentioned that during labour, most pregnant women were unable to decide about the referral and other care due to the pain and stress occurring during obstetric complications.

### **8.3.5 Awareness of birth preparedness and the complication readiness of participants**

Of the 1014 pregnant women, 772 (76.1%) were aware of the birth preparedness and complication readiness practices. The participants, 576 (74.6%) mentioned that sources of information for the awareness of birth preparedness were health professionals. One hundred and two participants (13.2%) received information from the WDA. More than half of pregnant women, 572 (56.4%), were aware of identifying the place of delivery, 194 (19.1%) had arranged for money for transportation, and 27 (2.7%) had arranged for a blood donor during an emergency blood loss.

### **8.3.6 Practice of birth preparedness and complication readiness of participants**

Approximately 750 (74%) respondents had received advice about birth preparedness from health professionals, and 869 (85.7%) planned and prepared to save for the birth to prevent complications related to pregnancy, childbirth, and the postpartum period. Most pregnant women, 678 (78%), had prepared food items to consume during childbirth, and 580 (63.3%) planned to buy the newborn's clothes. Concerning the important lifesaving components of birth preparedness, 634 (72.9%) had planned their place of birth, but 330 (38.9%) had prepared to save money, and 139 (16%) had identified the means of transportation to use in an emergency that could be experienced during the pregnancy, childbirth and postpartum periods. The same responses were given by the FGD participants, namely that a few pregnant women had prepared to identify the means of transportation. Their lack of preparation was due to the scarcity of transportation in their residence area. Therefore, unless the health centre facilitates transportation, paying for a rental car during referral to the hospitals to get urgent care is difficult.

### **8.3.7 Awareness of key danger signs among pregnant women**

Of the 1014 participants asked about the unforeseen danger signs that could be life-threatening for pregnant women, 691 (68.1%) were aware of the key danger signs that could occur during pregnancy, childbirth, and the postpartum periods. However, 233 (23%) of the pregnant women did not know any of the danger signs related to pregnancy, childbirth and the postpartum time.

### **8.3.8 Awareness of detecting the key danger signs during pregnancy**

The pregnant women were asked to identify the six danger signs which can occur during pregnancy. The majority, 544 (53.6%), mentioned severe vaginal bleeding as the most frequently occurring danger signs, while 85 (4.8%) cited blurred vision as a key danger sign during pregnancy. Related to the danger signs that can occur during labour, 420 (41.4%) mentioned vaginal bleeding, and 351 (34.6%) cited prolonged labour. The six components of danger signs during the first two days of postpartum were assessed. The 432 (42.6%) pregnant women stated that vaginal

bleeding was a danger sign, the second most dangerous sign referred to by 144 (14.2%) of the respondents was fever, and 48 (4.7%) identified convulsions as a danger sign that could occur during the first two days of the postpartum period.

### **8.3.9 Key factors influencing birth preparedness and complication readiness practice**

The BPCR practices of pregnant women on the mandatory components of birth preparedness in this study were low; for instance, 38.9% of the respondents saved money to use during EMOC, 18% of the pregnant women planned to identify skilled birth attendants, and only 16% of the pregnant women had identified the means of transportation during an urgent referral.

The inferential statistics using multiple logistic regression showed many independent variables significantly associated with the birth preparedness and complication readiness practices of pregnant women.

1. The ages of the pregnant women ranged from 20 to 25 years at the first marriage.
2. The pregnant women owned mobile phones.
3. The urban residences of pregnant women.
4. The pregnant women had their husbands' support.
5. The pregnant women were assisted with household activities by their relatives.
6. The pregnant women were aware of birth preparedness.
7. The pregnant women's belief in the importance of BPCR.
8. The pregnant women received some advice about BPCR from health professionals.

## **8.4 CONCLUSIONS**

This study assessed the level of awareness, perceptions, and factors associated with birth preparedness and complication readiness practices to develop strategies for improving birth preparedness among pregnant women attending ANC clinics in selected health facilities of the Arsi Zone, Oromia, Ethiopia. Based on a related



conceptual paradigm, the findings revealed that the birth preparedness and complication readiness practices as an outcome were determined by different demographic, social, economic, cultural, awareness and personal perception factors, which should be identified using appropriate research methods. Various literatures were reviewed to identify what had been done previously in relation to this study. An extensive literature review explored the knowledge association between dependent and independent variables. The independent variables included sociodemographic, maternal obstetric history, maternal health service utilisation, maternal awareness of BPCR, obstetric complications encountered, birth preparedness practices, and obstetric danger signs.

A sequential explanatory mixed methods study was used to identify pregnant women's birth preparedness and complication readiness practices. Interviewer-administered questions were used to assess 1014 pregnant women attending ANC clinics in three health centres and two hospitals, three FGDs among the pregnant women and nine in-depth interviews with health professionals were conducted in one hospital and three health centres in the Arsi Zone Oromia, Ethiopia. The data collected in the quantitative study were entered into Epi Info version 3.4.5 and transferred to SPSS version 26 for further cleaning and analysis of the study findings related to the qualitative study findings. An inductive thematic analysis approach was used for the reduction and analysis strategy, which helped code, categorise, and summarise to explore the concepts in the collected data.

Of the 792 pregnant women who had a history of a previous pregnancy preceding this survey, 729 (92%) made at least one ANC visit, and only 23.3% had four ANC visits for their last pregnancy. Over half (52%) of pregnant women started their first ANC visit between four and six months of gestational age.

Seven hundred and seventy-two (76.1%) pregnant women were aware of birth preparedness, and 56.4% were aware of identifying the place of delivery. Related to birth preparedness practices, 87.5% of the respondents reported engaging in birth preparedness actions for their current pregnancy. The majority (78%) prepared food items to use during the postpartum period. Concerning the important lifesaving components of birth preparedness, 38.9% of the participants had saved

money for emergencies, and 16% of the respondents had identified means of transportation for emergencies. Notably, 68.1% of pregnant women could detect the danger signs of obstetric complications, and the most mentioned danger sign by pregnant women was severe vaginal bleeding.

Among the sociodemographic variables, the study identified urban residence, the age at the first pregnancy, husband support, pregnant women being assisted by relatives', household activities, and a personal mobile phone as determinants of birth preparedness and the complication readiness practice of pregnant women. Additionally, the study identified whether the pregnant women were aware of birth preparedness, and their knowledge of the danger signs was determined, the need for health professional counselling and advice and other obstetrics determinant factors pertaining to the birth preparedness and complication readiness practices of pregnant women.

## **8.5 RECOMMENDATIONS**

Based on this study's findings and nationally and internationally accepted obstetrics standard operating procedures, the following recommendations are addressed at the different responsible bodies to fill the gaps in the strategies to improve the birth preparedness and complication readiness practices among pregnant women attending the ANC clinic at the Arsi Zone, Oromia, Ethiopia, and another similar setup in the country.

### **8.5.1 Recommendations at policy and programme level**

These recommendations are targeted at addressing the gap in the development of strategies to improve the BPCR practices of pregnant women by the Federal Ministry of Health (FMOH), the Oromia Regional Health Office, the Arsi Zonal Health Office, the government, and non-government organisations working on MCH care in the country at federal and regional levels.

Despite many guidelines and strategies that the WHO presented, the UN (SDG goal 3) and the FMOHE related to maternal obstetric care; for instance, the 2016 WHO ANC guidelines, the WHO recommendation for positive pregnancy

experience, the UN SDG goal 3, 2016–2030; and the FMOHE's national reproductive health strategies 2016–2020. In addition, at almost all the health institutions providing 24-hour maternal obstetric care services, the study findings revealed gaps in the utilisation of maternal health services by pregnant women; for instance, a limited number (23%) of pregnant women undertook the fourth visits to the ANC in the Arsi Zone, although 30% of the pregnant women had encountered obstetric complications in their previous pregnancy. Most pregnant women did not emphasise the mandatory components of birth preparedness.

Only a limited number of pregnant women saved money for emergency care and transportation; thus, “Why did pregnant women not prepare for the major components of birth preparedness in the Arsi Zone, Oromia?” In this regard, one needs to consider the Three Delay Models of maternal care: deciding to seek care, identifying and reaching appropriate health services, and getting timely and appropriate care after reaching the health facility. This study also identified the following gaps: infrastructure, professional competency, awareness of pregnant women, cultural and social relations, and professional motivation.

1. Therefore, the policymakers and the national and regional leaders should emphasise facilitating appropriate budget allocation for obstetric care, improving infrastructure like roads and means of transportation, and building maternity waiting areas in hospitals and health centres for pregnant women coming for obstetric care from far distances to prevent obstetric complications.
2. There should be motivation and sensitisation training on birth preparedness for health professionals, and health insurance coverage should be increased in the community to prevent a shortage of money during obstetric complications.
3. The existing WHO ANC guidelines should be expanded to incorporate the birth preparedness and complication readiness practices of pregnant women.
4. It is also recommended that the FMOHE should prepare national ANC guidelines based on the country's context by including the significant

components of birth preparedness and complication readiness intervention actions in the ANC registration book, which enable the monitoring of the birth preparedness actions of pregnant women for a positive outcome of the pregnancy.

5. The findings from this study identified that the ANC registration book lacked the birth preparedness components, and the district health information system (DHIS) omitted birth preparedness from the monthly and annual reports of the health indicators. Therefore, it is recommended that due attention be given by higher officials at the federal and regional levels to incorporating the birth preparedness and complication readiness practices into the DHIS health indicators through the process of collecting data, analysing, and interpreting the findings of birth preparedness on pregnant women, to use as one of the strategies to reduce maternal and neonatal mortality.
6. Sustainable advocacy and promotion through IEC materials are necessary to enable birth preparedness and complication readiness practices for pregnant women as part of the public health priority agenda.
7. The study found that 79.9% of pregnant women had their own mobile phones. The pregnant women who owned their mobile phones were twice as prepared for birth as those who had no mobile phones. Therefore, it is recommended that some budget be allocated by the regional health office or the Federal Ministry of Health for mobile cards to midwives to communicate with pregnant women who missed their ANC appointments, retrieve ANC follow-up defaulters, and remind pregnant women in their third trimester to give birth in a health facility.
8. Male partner involvement in ANC, birth preparedness, and other maternal health services are not yet considered some of the priorities to improve maternal health service utilisation.
9. This research study also found that pregnant women who received support from their husbands during their pregnancy were twice as likely to utilise ANC and other maternal healthcare services than their counterparts. Therefore, it is recommended that the FMOHE and the regional health office

should prepare training guidelines for health professionals to increase male involvement in maternal health services.

### **8.5.2 Recommendations for health facility leaders and health professionals**

1. The health facilities included in this study were three health centres, one primary hospital from a semi-urban area, and one specialised teaching hospital from an urban area. Health facility leaders should consider the appropriate utilisation of available resources and the allocated budget for planned activities. To alleviate the shortage of transportation during obstetric emergency care, the health facilities' ambulances should be functional and ready to provide urgent transportation services for pregnant women facing obstetric emergencies.
2. The study found that most of the time, the health centre ambulances do not function due to a lack of maintenance, a shortage of diesel, and being used for unrelated purposes rather than for allocated maternal health services. Therefore, it is suggested that allocating an adequate budget for maintenance, buying enough kerosine, and avoiding the use of ambulances for other services instead of obstetric emergency services be allocated.
3. The study found that some of the health professionals were reluctant and disrespected pregnant women during the utilisation of obstetric services. Therefore, it is important to prepare training for the health professionals on the compassionate and respectful care of the clients.
4. Health facilities should work on client satisfaction by improving the quality of maternal health services, decreasing unnecessary waiting time during maternal health service utilisation, detecting maternal danger signs early, and referring patients to an appropriate higher health facility.
5. According to this study's findings, the involvement of the women's health development armies in advocacy groups for birth preparedness is low. The zonal or district health office leaders should prepare training for the women's health development armies on the following topics of birth preparedness and complication readiness action:

- a. Addressing the advantage of early birth preparedness and complication readiness practices of pregnant women,
- b. Identifying the major components of birth preparedness practices to prevent obstetric emergencies,
- c. Identifying obstetrics danger signs during pregnancy, birth, and postpartum period.
- d. The means of communication between the health facility and pregnant women.
- e. The means of income generation to save money to use during an emergency.
- f. The way of identifying the means of transportation during emergencies.

### **8.5.3 Recommendations for conducting future research in different areas**

1. This study suggests conducting more research at the community, policymaker, and programme level using different research approaches to identify the root causes of pregnant women's lack of early birth preparedness actions on the main components of birth preparedness and develop strategies to improve birth preparedness.

## **8.6 CONTRIBUTIONS OF THIS STUDY**

This study aims to develop strategies to improve the BPCR of pregnant women by assessing their awareness and exploring their perceptions in relation to birth preparedness at an ANC clinic in Arsi Zone, Oromia, Ethiopia. The study findings contributed by exploring the factors that significantly affect the BPCR of pregnant women. As a strength, this study assessed the previous and present obstetric histories, utilisation of obstetric health services, encountered obstetric complications in the last pregnancy, and the level of BPCR to identify the gaps and develop strategies to improve pregnant women's BPCR.

This study identifies why pregnant women did not prepare for the major components of birth preparedness through an FGD among pregnant women and

an in-depth interview with health professionals working in obstetric health services and programme co-ordinators, which helps to fill the gap in the findings in the quantitative study. The study also contributes to pregnant women's awareness of birth preparedness as a strategy to prevent obstetric complications.

### **8.7 LIMITATIONS OF THE STUDY**

This study applied a facility-based explanatory sequential mixed methods study design to conduct this research. A cross-sectional study design was used in the quantitative part of the study. One of the limitations of a cross-sectional study design is that it does not show the temporal relationship of the causes and effects. Furthermore, it needs to have a large sample size to minimise the selection bias; therefore, the researcher preferred to use the explanatory sequential mixed methods and to select a large sample to increase the validity of the study. Finally, this researcher would suggest using a different study design to identify the direct causes of problems that hinder pregnant women's birth preparedness and complication readiness practices.

### **8.8 CONCLUDING REMARKS**

BPCR practices among pregnant women are one of the strategies to minimise maternal and newborn mortality, but higher-level officials give it low priority, including the different levels of health facilities in the country. The study used an appropriate study design and analysis tools to identify the result. This study revealed that the main predictors of the birth preparedness and complication readiness practices of pregnant women in the Arsi Zone were urban residents, the pregnant women owned mobile phones, the pregnant women received support from their husbands during pregnancy and the pregnant women were assisted with household activities by their relatives. Furthermore, they were aged 20 to 25 years at the first pregnancy, the pregnant women were aware of the BPCR, they received advice from the health professionals, were involved in ANC visits during the previous pregnancy, and the pregnant women were able to detect the obstetric danger signs that were the key determinant factors associated with the birth

preparedness and complication readiness practices of pregnant women attending the ANC clinic in the Arsi Zone Oromia, Ethiopia.



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## APPENDICES

### APPENDIX 1: ETHICAL CLEARANCE LETTER FROM UNISA

	
<b>COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE</b>	
23 March 2021	
Dear Solomon Tejineh Mengesha	
<b>Decision:</b> Ethics Approval from 23 March 2021 to 23 March 2026	NHREC Registration # : Rec-240816-052 CREC Reference # : 67146074_CREC_CHS_2021
<b>Researcher(s):</b>	<b>Name: ST Mengesha</b> <b>Contact details: 67146074@mylife.unisa.ac.za</b>
<b>Supervisor(s):</b>	<b>Name: Prof TG Lumadi</b> <b>Contact details: lumadtg@unisa.ac.za</b>
<b>Title: <i>Development of strategies for improving birth preparedness among pregnant women attending antenatal care clinics in, Oromia, Ethiopia</i></b>	
<b>Degree Purpose: PhD</b>	
Thank you for the application for research ethics clearance by the Unisa College of Human Science Ethics Committee. Ethics approval is granted for five years.	
The <i>Low risk application</i> was reviewed on the <b>23 March 2021</b> by College of Human Sciences Research Ethics Committee, in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.	
The proposed research may now commence with the provisions that:	
<ol style="list-style-type: none"><li>1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.</li><li>2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College Ethics Review Committee.</li><li>3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.</li><li>4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a</li></ol>	
 University of South Africa Pretter Street, Muckleneuk Ridge, City of Tshwane PO Box 392 UNISA 0003 South Africa	

progress report.

5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No fieldwork activities may continue after the expiry date (**09 April 2021**). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.


*Note:*

*The reference number **67146074\_CREC\_CHS\_2021** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,

Signature : 

Prof. Ilse Ferns  
CHS Ethics Chairperson  
Email: [fernsi@unisa.ac.za](mailto:fernsi@unisa.ac.za)  
Tel: (012) 429 8210

Signature : PP 

Prof K. Masemola  
Exécutive Dean : CHS  
E-mail: [masemk@unisa.ac.za](mailto:masemk@unisa.ac.za)  
Tel: (012) 429 2298

**APPENDIX 2: LETTER OF SUPPORT FROM UNISA REGIONAL LEARNING  
CENTRE**



15 April, 2021  
UNISA-ET/KA/ST/29/15-04-2021

**Oromia Regional Health Bureau  
Addis Ababa**

Dear Madam/Sir,

The University of South Africa (UNISA) extends warm greetings. By this letter, we want to confirm that **Mr. Solomon Tejineh Mengesha** (student number 67146074) is a PhD student in the Department of Health Studies at UNISA. Currently, he is at the stage of data collection on his doctoral research entitled "*Development of strategies for improving birth preparedness among pregnant women attending antenatal care clinics in, Oromia, Ethiopia*".

This is therefore to kindly request your cooperation in assisting the student in any way that you can. We would like to thank you in advance for all the assistance that you would provide to the student. Attached, please find the ethical clearance that the student secured from the Department of Health Studies.

Sincerely,

Dr. Tsige Gebremeskel Abera  
Director

<b>UNISA REGIONAL LEARNING CENTRE</b>	
<b>PO BOX 13836 ADDIS ABABA ETHIOPIA</b>	
<b>TEL</b>	<b>+251-114-350141</b>
	<b>+251-114-350078</b>
<b>FAX</b>	<b>+251-114-351243</b>
<b>MOBILE</b>	<b>+251-912-191483</b>

**APPENDIX 3: PERMISSION LETTER TO CONDUCT THE RESEARCH FROM  
 OROMIA REGIONAL HEALTH BUREAU TO ARSI ZONE HEALTH  
 OFFICE**

<p><b>Biiroo Eegumsa Fayyaa Oromiyaa</b>  <b>Oromia Health Bureau</b>  <b>Saarbet (Calcalii) - Finfinnee</b></p>		<p><b>የኦሮሚያ ጤና ጥበቃ ቢሮ</b>  <b>ኅርቢት(ጤልጤሲ) - ፊንፊኔ</b></p>
<p>Lakk/Ref.NO <u>BEFO/MBTFH/1-16/10399</u>                  Guyyaa/Date <u>25/09/2013</u></p>		
<p><b>Wa/Eg/Go/Arsii tiif</b></p>		
<p><b><u>Asalaa</u></b></p>		
<p><b>Dhimmi: <u>Xalayya Deggersa Ilaala</u></b></p>		
<p>Akkuma beekamu Biiroon Keenya Ogeyyii , dhabbilee akkasumas namoota qorannoo geggeessuuf propoozaala dhiyeffatan propoozaala isaanii madaaluun akkasumas iddo biratti ilaalchisani fudhatama argatan (approved) dhiyeffatan, propoozaala isaanii ilaaluudhaan waraqa deggersa ni kenna. Haaluma kanaan mata duree “Development of strategies for improving birth preparedness among pregnant women attending antenatal care clinics in, Oromia, Ethiopia” jedhamu irratti Kaadhimamaa barataa digirii sadaffaa Yuunivarsitii UNISA kan ta’e <b>Obboo Solomon Tejneh</b> Godina keessan keessatti qorannoo geggeessuuf propoozaala isaanii koree “Health Research Ethical Review Commite” Biiroo keenyatti dhiyeffatani jiru. Haaluma kanaan koreen “Health Research Ethical Review Committee” Biiroo keenya piropoozaal kana ilaaluun mirkanesse qorannoon kun akka hojii irra oolu murtesse jira.</p> <p>Kanaafuu, hojii qorannoo kana irratti deggersa barbaachisaa ta’e akka gootanii fi hordoftan jechaa, <b>Obboo Solomon Tejneh</b> tiis qorannoon kun qacceffamee eerga xumurame booda firii isaa koppii tokko BEFO tiif akka galii godhan galagalcha xalayaa kanaan isaan beeksifna.</p>		
<p>Mallattoo _____</p>		<p>Nagaa wajjin!</p>
<p>Maqaa <b>Obboo Solomon Tejneh</b></p>		
<p>Bilbila_ +251-9</p>		
<p><b><u>G/G</u></b></p>		
<p><b>‘Obboo Solomon Tejneh tiif</b></p>		

**APPENDIX 4: PERMISSION LETTER FROM ARSI ZONE HEALTH OFFICE TO  
DISTRICT HEALTH OFFICES**

WAJJIRA EEGUMSA FAYYAA  
GODINA ARSII



ARSII ZONE HEALTH OFFICE  
የ ለ ር ሲ ዞን ጤና ኮሚሽን

Ref.No./Lakk Q.F.H.D.2/4566

Date/Guyyaa 26-7-13

Hospitaala Asalluatiif  
Hospitaala Qarsaatiif  
Wajjira Egumsa Fayyaa Aanaa Zuway Dugdaatiif  
Wajjira Egumsa Fayyaa Aanaa Looode Heexoosaatiif  
Wajjira Egumsa Fayyaa Aanaa Heexoosaatiif

**B/G**

**Dhimmi:-Deeggarsa hojii qorannoo akka taasistam ibsuu ta'a**

Akkuma ammas olitti ibsamuuf yaalematti piroopoozaala waraqa qorannoo inste- duree "Development of Strategies for improving birth preparedness among pregnant women attending antenatal care clinics in Oromia, Ethiopia" jedhu irratti qorannicha kan gaggeessan Obbo Solomoon Tejineh (PI) hojjechuuf Piroopoozaalli isaanii sadarkaa **BEFON** 'Health Research Ethical Review Committee'n waa ilaalameef, isinis kanuma beekuudhaan sadarkaa dhaabbilee fayyaa bu'uuraa, hospitaalota fi hawaasaa aanaa keessanii irratti akka hojjetaniif deeggarsa barbaaschisaa akka gootanii fi bardoftan isin beeksisna.

Haaluma kanaanis Obbo Solomoon Tejineh, qorannichi yeroo xumurama bu'aa qorannichaatiin haala kenniinsa tajaajila fayyaa akka fooyyessinuuf kooppii tokko Wajjira Egumsa Fayyaa Godina Arsiiin kuma **Hooggansa Balaa Fayyaa Hawaasaa, Qu'annoo fi Qorannoo Fayyaati** akka dhiyeessitan cimsinee isin ni beeksisna.

Haaluma kanaanis umi Obbo Solomoon Tejineh qorannichi yeroo qaacceffamu kooppii tokko Wajjira Egumsa Fayyaa godina Arsiiitiif akkan dhiyeessu mallattoo kootiin nan mirkaneessa.

Maqaa: Obbo Solomoon Tejineh (PI)

Mallattoo: Babilaa:

S/G

Obbo Solomoon Tejineh (PI)'tiif

**B/G**

Nigama Wajjin!

*(Signature)*  
Nigama Wajjin!  
100% Balaa L.D.A.  
B.Sc. MPH/Epidemiologist

*(Stamp)*  
Hooggansa Balaa Fayyaa Hawaasaa  
fi Qorannoo Fayyaa Godina Arsii  
Arsi Zone PHO and Health Research Center



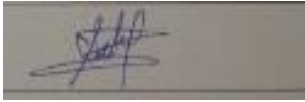
Teessoo: - B# +251-222-38-86-60/84853-7122/3640/Fax: - 022-311972/  
Email: [gemeschisoo@gmail.com](mailto:gemeschisoo@gmail.com) E.O. Box:-  
Address:-ETHIOPIA, OROMIA REGIONAL STATE, ARSI, ASALLA

## APPENDIX 5: RESEARCHER ACKNOWLEDGEMENT

I, Solomon Tejineh Mengesha, ID number 67146074, hereby, in my capacity as a researcher, acknowledge that I am aware of and familiar with the stipulations and contents of the

- Unisa Research Policy
- Unisa Ethics Policy
- Unisa IP Policy

and that I shall conform to and will abide by these policy requirements.

Signature: ..........

Date: .....

## **APPENDIX 6: REQUEST FOR PERMISSION TO CONDUCT THE STUDY**

To: Oromia Regional Health Bureau

Addis Ababa, Ethiopia

Email: orhbphem@gmail.com

My name is Solomon Tejineh Mengesha, and I am currently studying towards a PhD in Public Health at the University of South Africa. With my supervisor, Professor T.G. Lumad, we request permission from your good office to conduct research entitled “Strategies for improving birth preparedness among pregnant women attending antenatal care clinics in Oromia, Ethiopia.”

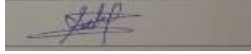
The study aims to determine the level of birth preparedness, complication readiness practice, and associated factors among pregnant women attending antenatal care clinics in selected health facilities of Arsi Zone, Oromia, Ethiopia. The study participants will be involved in interviewer-administered questions and focus group discussions. As mentioned above, the data collection methods used in this research pose no potential risk to the study participants. The confidentiality of the participants will be ensured by withholding sensitive information found in the data collection tools. Codes will be used instead of the names of participants throughout the study process. The findings of this study will be processed into a research report, journal publications, and/or conference proceedings, but the participants' participation and personal issues will be kept confidential.

### **The benefits of this study**

After determining the birth preparedness complication readiness practice level, the information will be used to develop intervention strategies to improve the birth preparedness and complication readiness practice among pregnant women.

Thus, I am kindly requesting that you grant me permission to conduct this proposed research in the Arsi Zone in the Oromia Region.

Kind regards,



Solomon Tejineh Mengesha

(BSC, MPH/RH), PhD in Public Health (candidate)

Email: 67146074@mylife.unisa.ac.za or stejineh@yahoo.com



## APPENDIX 7: REQUEST TO PARTICIPATE IN THE STUDY

Ethics clearance reference number: Rec-240816-052

Research permission reference number: #67146074\_CREC-CHS\_2021

Date \_\_\_\_\_

Title: Development of strategies for improving birth preparedness among pregnant women attending antenatal care clinics in Oromia, Ethiopia.

### **Dear Prospective Participant**

My name is Solomon Tejineh Mengesha. I am currently a PhD student in Public Health at the University of South Africa, and I am doing research with my supervisor, Professor T.G. Lumadi, in the Department of Health Studies at the University of South Africa. You will be selected as one of the participants to give information on the study title mentioned above through interview-administered questions based on the study inclusion criteria.

The study protocol confirms that all the information collected through inquiry will be kept confidential. An ethical clearance letter will be obtained from UNISA's Institutional Review Board, and an authorisation letter will be secured from the Oromia Regional Health Bureau to conduct this study. Furthermore, your answers will be handled confidentially. Your name will not be written on this form; no person will be told what you share. You must be aware that the findings of this study will be processed into a research report, journal publications, and/or conference proceedings, but your participation will be kept confidential unless otherwise specified.

Confidentiality will be ensured by keeping sensitive information of the study participants obtained through the data collecting tools. The information that will be collected will be kept confidential and not made accessible to anyone. Codes will be used instead of the names of participants throughout the study process to identify the participants, along with the interview-administered questions and audio records from the focus group discussion. Hard copies of your answers will be

stored by the researcher for a minimum period of five years in a locked cupboard/filing cabinet for future research or academic purposes; electronic information will be stored on a password-protected computer. Finally, hard copies will be shredded, and the audio taps records will be erased after compiling the aggregate data of each individual.

You do not have to answer any questions; if you do not want to, you can stop answering the questions at any time. However, your honest answer to these questions will help create a better understanding of your experiences related to the strategies for improving birth preparedness among pregnant women. We would like to express our appreciation for your help in responding to these questions. It will take 20 to 30 minutes to answer the questions.

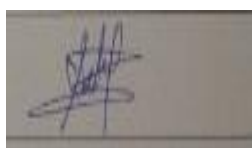
If you would like to be informed of the final research findings, please contact:

Solomon Tejineh Mengesha: Mobile phone +251911816781 or email 67146074@mylife.unisa.ac.za.

If you have any concerns about how the research has been conducted, you may contact my supervisor, Professor T.G. Lumadi, by email at lumadtg@unisa.ac.za.

Thank you for taking the time to read this information sheet. If you are willing to participate in this study, kindly complete the consent form below.

Kind regards

A small, square image showing a handwritten signature in blue ink on a light-colored background. The signature is stylized and appears to be the name of the researcher.

Solomon Tejineh Mengesha

Researcher

**APPENDIX 8: QUANTITATIVE STUDY INTERVIEWER ADMINISTERED  
QUESTIONNAIRE PARTICIPANTS INFORMATION SHEET**

Greetings!

My name is \_\_\_\_\_ I am working as a data collector in the study that will be conducted by Solomon Tejineh Mengesha for undertaking this thesis for a PhD in Public Health Health Studies at the University of South Africa (UNISA). His research is entitled "Strategies for improving birth preparedness among pregnant women attending antenatal care clinics in Oromia, Ethiopia." You will be selected as a participant to provide information on the study title mentioned above through an interviewer-administered questionnaire based on the study inclusion criteria. The study protocol confirms that all information collected through inquiry will be kept confidential. An ethical clearance letter will be obtained from UNISA's Institutional Review Board, and an authorisation letter will be secured from the Oromia Regional Health Bureau to conduct this study. Furthermore, your answers will be handled confidentially. Your name will not be written on this form; no person will be told what you share. You do not have to answer any questions; if you do not want to, you can stop answering the questions at any time. However, your honest answer to these questions will help create a better understanding of your experiences related to the strategies for improving birth preparedness among pregnant women. We would like to express our appreciation for your help in responding to these questions. It will take 20 to 30 minutes to answer the questions.

1. Yes (provide the consent form) 2. No (thank the individuals who will be leaving the study)

I will read the above-mentioned information to the participants. I will ask if the study participants have any questions and try to answer all the questions to the best of my knowledge. Finally, I will hand the consent form to the participant for their decision.

Name of data collector \_\_\_\_\_

Date permission obtained \_\_\_\_\_ Date the data collection began  
\_\_\_\_\_

Date data collection ended \_\_\_\_\_ Signature \_\_\_\_\_

## APPENDIX 9: CONSENT TO PARTICIPATE IN THE STUDY

I, \_\_\_\_\_ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedures, potential benefits and anticipated inconvenience of participating.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunities to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without any penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the **interviewer-administered semi-structured questionnaire**.

I have received a signed copy of the informed consent agreement.

Participant's name & surname..... (Please print)

Participant's signature.....

Date.....

Researcher's name & surname: Solomon Tejineh Mengesha (please print)

Researcher's signature..... Date.....

## APPENDIX 10: ENGLISH VERSION QUANTITATIVE QUESTIONNAIRE

English Version questionnaire

Name of district \_\_\_\_\_ Name of health facility \_\_\_\_\_

Serial number \_\_\_\_\_

### Section I: Sociodemographic Information

S.No	Questions	Choice of response	Skip
101	How old are you?	_____ Years old	
102	Your residence area	1. Urban      2. Rural	
103	What is your marital status?	1. Married 2. Divorced 3. Cohabitation 4. Widowed 5. Single	
104	What is your educational status?	1. Read and write 2. Cannot read and write 3. Primary education 4. Secondary education 5. College and above	
105	What is your husband's educational level?	1. Read and write	

S.No	Questions	Choice of response	Skip
		2. Cannot read and write 3. Primary education 3. Secondary education 4. College and above	
106	To which religion do you belong?	1. Orthodox      4. Catholic 2. Muslim        5. Others 3. Protestant	
107	What is your ethnicity?	1.. Oromo        3. Gurage 2. Amhara        4. Others	
108	What is your occupation?	1. Housewife 2. Farmer 3. Merchant 4. Government employee 5. Daily labourer 6. Student 7. Housemaid 8. Others	
109	What is your monthly income?	_____ ETB	

S.No	Questions	Choice of response	Skip
110	What is your husband's occupation?	1. Farmer 2. Governmental employee 3. Merchant 4. Daily labourer 5. Student 6. Non-governmental employee (private work)	
111	What is your husband's monthly income?	_____ ETB	
112	Do you have your own mobile phone?	1. Yes      0. No	
113	If married in a union		
	Did you get support from your husband during your recent pregnancy and the last childbirth in delivery/postpartum?	1. Yes 0. No	If no, skip to Q115.
114	If yes, what support did you get from your husband during your recent pregnancy, delivery and postpartum?  More than one answer is possible.	1. Accompany me during a health facility visit 2. Prepare money for transport 3. Sharing responsibility in childcare and housework 4. Other (specify) _____	
115	Did you get support from your relatives in your current pregnancy, delivery/postpartum?	1. Yes	



S.No	Questions	Choice of response	Skip
		0. No	
116	<p>If yes, what kind of support did you get?</p> <p>More than one answer is possible.</p>	<p>1. Accompany me during a health facility visit</p> <p>2. Provide money for transport</p> <p>3. Help with housework and childcare</p> <p>4. Other (specify) _____</p>	
117	What is your family size?	_____ in number	
118	How much time do you spend away from home at the health institution?	<p>1. &lt;15 minutes</p> <p>2. 15 to 30 minutes</p> <p>3. 30 to 60 minutes</p> <p>4. &gt; 1 hour</p>	
119	Who is the decision-maker to seek care during pregnancy, delivery and postpartum?	<p>1. Your self</p> <p>2. Husband</p> <p>3. Both of you jointly</p> <p>4. Other (specify) _____</p>	

## Section II: Past and present obstetric information

S.No	Questionnaire	Choice of response	Skip
201	How old were you at the time of your first pregnancy?	_____ years old	
202	How many pregnancies have you had, including the current pregnancy, abortion, and stillbirths?	_____ in number	
203	Did any of your pregnancies end in abortion before 28 weeks of gestation?	1. Yes 0. No	If no, skip to Q204.
204	If you answered "yes" to Q203, how many of your pregnancies ended in an abortion?	_____ times	
205	Did any of your pregnancies end in a stillbirth?	1. Yes 0. No	If no, skip to Q207.
206	If you answered "yes" to Q205, how many of your pregnancies ended in a stillbirth?	_____ times	
207	How many live births did you have?	_____ in number	
208	What is the time interval between this pregnancy and your previous pregnancy?	_____ Month	

### Section III: Service use, planning action, intention and awareness

S.No	Questions	Choice of response/alternatives	Skip
301	Do you have any information about birth preparedness and complications readiness?	1. yes 0. No	If no, skip to Q304.
302	If you answered “yes” to Q301, mention your source of information.  More than one answer is possible.	1. Health worker 2. HEWs 3. Radio 4. Television 5. From your friend 6. Community health volunteers 7. Other (specify) _____	
303	What birth preparation actions have you heard about?  More than one answer is possible.	1. Identifying place delivery 2. Transportation for emergency 3. Saving money for emergency 4. Identified skilled birth provider 5. Identifying blood donors 6. Grains for porridge and other food 7. Clothes for newborn 8. Other (specify)_____	

S.No	Questions	Choice of response/alternatives	Skip
304	Did you attend ANC for your last delivery (for the pregnancy before this pregnancy)?	1. Yes 0. No	If no, skip to Q308.
305	If you answered "yes" to Q304, in which month did you have your first visit?	within _____ Month	
306	If you answered "yes" to Q304, how many visits did you have?	1. One visit 2. Two visits 3. Three visits 4. Four and above	
307	If you answered "yes" to Q304, where did you attend your ANC?	1. Government hospital 2. Government health centre 3. Health post 4. Private health institution 5. Others (specify) _____	
308	Where did you give birth to your last child before this pregnancy?	1. Home 2. Government hospital 3. Private hospital 4. Health centre 5. Health post	

S.No	Questions	Choice of response/alternatives	Skip
		6. Other (specify)_____	
309	If home delivery, why did you prefer home delivery	1. Due to high cost of health facilities 2. Long distance of health facilities 3. Due to lack of good care in health facilities 4. No female health professionals 5. My husband did not volunteer 6. I preferred to be managed by my family at home 7. Due to availability of traditional birth attendants 8. My labour was simple and within a short time 9.No problems was encountered in my previous home birth 10.There was nobody to go with me to health facility 11. I was told that my pregnancy was healthy 12. Lack of transportation	
310	If delivery was at a health facility why?	1. The health facility was near to me 2. Need to have a better service	

S.No	Questions	Choice of response/alternatives	Skip
		3. Due to a previous better outcome delivered in the health facility 4. To prevent previous bad outcome of home delivery 5. Due to a difficult labour 6. I was told to deliver at the health facility 7. Others specify _____	
311	Who attended your last delivery ?	1. Doctor 2. Midwife 3. Nurse 4. HEW 5. TBA/TTBA 6. Family 7. Others (specify) _____	
312	What was the mode of delivery?	1. Spontaneous vaginal delivery 2. Instrumental assisted delivery 3. Caesarean section (S/C) 4. I do not remember 5. Other (specify) _____	

<b>S.No</b>	<b>Questions</b>	<b>Choice of response/alternatives</b>	<b>Skip</b>
313	Did you encounter any problems during your last childbirth before this pregnancy?	1. Yes  0. No	If no, skip to Q321.
314	If yes to Q 312, Which problems were encountered?  More than one answer is possible.	1. Excessive vaginal bleeding  2. Prolonged labour (more than 12 hrs)  3. Retained placenta (more than 1 hr)  4. Malpresentation  5. Convulsion/blurred vision  6. High grade fever  7. Early rupture of membrane  8. Unable to control urine and stool  9. Foetal death  10. Twin pregnancy	
315	Were you referred to the next health facility?	1. Yes  0. No	
316	If you answered “yes” to Q314, who accepted the referral?	1. Yourself  2. My husband  3. Both of us	

S.No	Questions	Choice of response/alternatives	Skip
		4. Other family member	
317	<p>Have you encountered any problems during the referral?</p> <p>More than one answer is possible.</p>	<p>1. Lack of transportation</p> <p>2. Shortage of money for transportation and hospital care</p> <p>3. Difficulty in identifying the referral place</p> <p>4. Inaccessibility of road</p>	
318	Who accompanied you during your referral?	<p>1. Husband</p> <p>2. Relative</p> <p>3. Mother-in-law</p> <p>4. Alone</p> <p>5. With a health worker</p> <p>6. Other (specify) _____</p>	
319	What mode of transportation did you use during your referral?	<p>1. On foot</p> <p>2. Carried by other people</p> <p>3. By Cart</p> <p>4. By health facility ambulance</p> <p>5. Rental car</p> <p>6. On horseback</p>	



S.No	Questions	Choice of response/alternatives	Skip
		7. Motor bicycle 8. Other	
320	After you arrived at the referral health institution, within how many hours did you get treatment?	1. Immediately on arrival 2. Within 1 hour 3. 2 hours 4. > 3 hours	
321	At which stage of gestation did you start ANC for your current pregnancy?	Within _____ month	
322	How many times did you attend ANC during your current pregnancy?	1. One time 2. Two times 3. Three times 4. Four times	
323	By whom were you seen during your visit?	1. Doctor 2. Midwife 3. Health officer 4. Nurse 5. Other (specify) _____	
324	Did you get any advice concerning birth preparedness and	1. Yes 0. No	

S.No	Questions	Choice of response/alternatives	Skip
	complications readiness for this pregnancy during the ANC visit?		
325	Do you think that birth preparedness and complication readiness practice during pregnancy is important?	1. Yes 0. No	
326	Have you prepared for your current pregnancy?	1. Yes 0. No	
327	If you answered "yes" to Q325, what kind of preparation was done?  More than one answer is possible.	1. Identified place of delivery 2. Identified skilled birth provider 3. Saving money for emergency 4. Identifying the means of transportation for emergency 5. Identify the blood donor 6. Preparing grain for porridge and soup 7. Buying clothes for the newborn 8. Other (specify)_____	
328	Did you plan the place where you will give birth?	1. Yes 0. No	

S.No	Questions	Choice of response/alternatives	Skip
329	If you answered “yes” to Q328, where do you want to give birth for your current pregnancy?	1. Home      2. Government hospital 3. Health centre c4. Private hospital	

**Section IV: I Identifying obstetric danger signs during pregnancy, labour and postpartum**

S.No	Questions	Alternative choice of response	
401	In your opinion, can unforeseen danger signs related to pregnancy, labour and postpartum endanger the life of a woman?	1. Yes 2. No 3. I do not know	
402	If yes, where did you hear about danger signs?	1. Health workers 2. Health extension worker 3. Friend 4. Community health volunteers 5. Radio 6. Television 7. By reading a book 8. Other (specify)_____	

S.No	Questions	Alternative choice of response	
403	Do you know any danger signs that can endanger the life of women <b>during pregnancy</b> ?	1. Yes 0. No	
404	If yes, what kind of danger signs could occur <b>during pregnancy</b> ? (Please, first do not read the options for the client whether they list immediately or not)	1. Severe vaginal bleeding 2. Swollen hands and feet 3. Blurred vision 4. Reduced or stopped foetal movement 5. Water breaking (PROM)	
405	Do you know any danger signs that can endanger the life of women during <b>labour/childbirth</b> ?	1. Yes 0. No	
406	If yes, what kind of danger signs could occur during <b>labour/delivery</b> ? (Please, first do not read the options for the clients, whether they list immediately or not)	1. Severe vaginal bleeding 2. Prolonged labour >12/hr 3. Convulsion 4. Retained placenta (>1hr) 5. Severe headache	
407	Do you know any danger signs that can endanger the life of women during <b>the first two days after birth</b> ?	1. Yes 0. No	
408	In your opinion, which serious health problems can occur during <b>the first</b>	1, Severe bleeding	

<b>S.No</b>	<b>Questions</b>	Alternative choice of response	
	<b>two days after birth</b> that could endanger the life of a woman?	2. High fever 3. Malodorous vaginal discharge 4. Blurred vision 5. Severe headache 6. Convulsion	

Thank you for your response!

## APPENDIX 11: PARTICIPANTS' AMHARIC CONSENT LETTER

የፍቃደኝነት መግለጫ ፎርም

### መግቢያ

ጤና ይስጥልኝ ----- እባላለሁ ::

እኔ የዚህ ጥናት አባል ስሆን ይህ ጥናት በደቡብ አፍሪካ ዩኒቨርሲቲ በመማር ላይ ያለ የ ፒ.ኤች.ዲ ተማሪ የሚጠና ነዉ ::  
በዚህ ጥናት ውስጥ ለሚያደርጉት ተሳትፎ በቅድሚያ በጣም አመሰግናለሁ ::

ስለ ጥናቱ አላማ ከዚህ በታች እንደሚከተለው ገልጽሎታለሁ

### የጥናቱ አላማ

የጥናቱ አላማ በዚህ አካባቢ በጤና ድረጅቶች ውስጥ የነፍሰ ጡር ምረመራ ክትትል የሚያደርጉ እናቶች የወሊድ ቅድመ ዝግጅታቸው ምን እንደሚመስል ማወቅ ሲሆን ከዚህ በመነሳት ወደፊት አገልግሎቱን ለማሻሻል ስልት ለመቀየስ ነፍሰጡር እናቶች የበለጠ የወሊድ ቅድመ ዝግጅት እና በ እርግዝና ወቅት ለሚደርሱ ችግሮች በተጠናከረ መልኩ ለመከላከል ቅድመ ዝግጅት እንዲደርጉ ለማስቻል ነዉ ::

### በጥናቱ መሳተፍን በተመለከተ

ይህ ቃለ መጠይቅ በግምት 30 ደቂቃዎች ያህል ይወስዳል በዚህ ጥናት ውስጥ ለመሳተፍ የእርሶ ፈቃደኝነት አስፈላጊ ሲሆን ያለመሳተፍ ሙሉ መብት አለዎት :: ለመሳተፍ ፍቃደኛ ባይሆኑም በእርሶ ላይ ምንም የሚደርስ ነገር የለም ::

ፍቃደኛ ሆነው ቃለመጠይቅ ከተጀመረ በኋላም ቢሆን ለሚጠየቀው ጥያቄ መልስ ያለመስጠት ወይም ቃለ መጠይቁን በፈለጉ ጊዜ ማስቆ ምይችላሉ::

የምናደርገው ቃለ መጠይቅ ሚስጥራዊነቱ የተጠበቀ ሲሆን የዚህጥናት አጥኝዎች እርሶ የሚሰጡት መረጃ ስለ እርሶ የግል ማንነት አንዳች የሚገልፅ ነገር እንዳይኖረው አስፈላጊውን ጥንቃቄ ሁሉ ያደርጋሉ::

የሰጡት መረጃ ሚስጥራዊነቱ የተጠበቀ ሆኖ እንዲቀር ለዚህጥናት በተዘጋጀ ኮምፒተር ተቆልፎ የሚቀመጥ ሲሆን ከጥናቱ አጥኝዎች በስተቀር ማንም ሊያየው አይችልም:: የጥናቱ የመጨረሻው ውጤት ለጤና ባለሙያዎች፣ ለፖሊሲ አውጪዎች እንዲሁም በተለያዩ ኮንፈረንሶች በማቅረብ በጤና ድርጅት/የነፍሰ ጡር እናቶች የወሊድ ዝግጅት የበለጠ ለማሻሻል ስልት ለመቀየስ ጥረት ይደረጋል::



**APPENDIX 12: AMHARIC VERSION OF QUANTITATIVE QUESTIONNAIRE**

**የአማርኛ መጠይቅ**

የወረዳው ስም ----- የጤና ድርጅቱ ስም -----

ተራ ቁጥር -----

**መመሪያ:-** ከተሰጡት ምርጫዎች ውስጥ ትክክለኛውን መልስ ያክብቡ መልስ ለሚፃፍላቸው

ደግሞ በተዘጋጀው ቦታ ላይ ይፃፉ።

<b>ክፍል1. ማህበራዊና ኢኮኖሚያዊ ሁኔታን የሚዳስሱ መጠይቆች</b>			
ተ. ቁ	ጥያቄ	መላስ	ይዘለሉ
101	እድሜዎት ስንት ነው?	----- አመት	
102	የመኖሪያ ቦታ	1. ከተማ 2. ገጠር	
103	የጋብቻ ሁኔታዎ ምን ይመስላል?	1. ያገባ 2. የፈታ 3. ሳይጋቡ አብረው የሚኖሩ 4. ባለ የሞተባት	



**ክፍል 1. ማህበራዊና ኢኮኖሚያዊ ሁኔታን የሚዳስሱ መጠይቆች**

ተ. ቁ	ጥያቄ	መላስ	ይዘለሉ
		5. ያላገባች	
104	የትምህርት ሁኔታ	<ol style="list-style-type: none"> <li>1. ምንበብ እና መጻፍ</li> <li>2. ማናበብና መጻፍ የማይችል</li> <li>3. የመጀመሪያ ደረጃ ትምህርት</li> <li>4. ሁለተኛ ደረጃ</li> <li>5. ኮሌጅ እና ከዚያ በላይ</li> </ol>	
105	የባል የትምህርት ሁኔታ	<ol style="list-style-type: none"> <li>1. ምንበብ እና መጻፍ</li> <li>2. ማናበብና መጻፍ የማይችል</li> <li>3. የመጀመሪያ ደረጃ ትምህርት</li> <li>4. ሁለተኛ ደረጃ</li> <li>5. ኮሌጅ እና ከዚያ በላይ</li> </ol>	
106	የሚከተሉት እምነት	<ol style="list-style-type: none"> <li>1. አርቶዶክስ</li> <li>2. ሙስሊም</li> <li>3. ፕሮቴስታንት</li> </ol>	

**ክፍል 1. ማህበራዊና ኢኮኖሚያዊ ሁኔታን የሚያስሱ መጠይቆች**

ተ. ቁ	ጥያቄ	መለስ	ይዘለሉ
		4. ከቶሊክ 5. ሌላ ከሆነ ይገለጽ	
107	ብሄረን በተመለከተ	1. አሮሞ 2. አማራ 3. ጉራጌ 4. ሌላ	
108	የተሰማሩበት ስራ መስክ	1. የቤት እመቤት 2. . ግብርና 3. ነጋዴ 4. የመንግስት ስራ 5. የቀን ስራተኛ 6. ተማሪ 7. የቤት ሰራተኛ 8. ሌላ ከሆነ የገለጽ	

**ክፍል 1. ማህበራዊና ኢኮኖሚያዊ ሁኔታን የሚያስሱ መጠይቆች**

ተ. ቁ	ጥያቄ	መለስ	ይዘለሉ
109	በወር የሚያገኙት ገቢ	----- ብር	
110	ባለ ቤቶ የተሰማሩበት ስራ	1. ግብርና 2. የመንግስት ስራ 3. ነጋዴ 4. የቀን ስራተኛ 5. ተማሪ 6. የመንግስት ስራ ያልሆነ 7. ሌላ ከሆነ የገለጽ	
111	ባለቤቶ በወር የሚያገኙት ገቢ	----- ብር	
112	የግል ሞባይል አሎት	1. አዎ 0. የለም	
113	ያገቡ ከሆነ በአሁን እርዝናዎ በበፊቱ እንዲሁም በወሊድ ጊዜ ከትዳር አጋሮ እገዛ (እርዳታ) አግኝተዋለ	1. አዎ 0. የለም	ካላገቡ ወደ ጥያቄ ቁ115 ይለፉ

**ክፍል 1. ማህበራዊና ኢኮኖሚያዊ ሁኔታን የሚዳስሱ መጠይቆች**

ተ. ቁ	ጥያቄ	መለስ	ይዘለሉ
114	113 ኛ ጥያቄ አዋ ከሆነ ምን አይነት እርዳታ ነዉ በ አሁኑ እርግዝናዋ፡ በበፊቱ፡ ሲወለወዱ እንዲሁም ከወለዱ ብሃላ ከ ባለቤቶ ያገኙት	<ol style="list-style-type: none"> <li>1. የጤና ድርጅት ስሄድ አብሮን በመሄድ</li> <li>2. የትራንስፖርት ገንዘብ በማዘጋጀት</li> <li>3. በቤት ውስጥ ስራ በመስራት እና ልጆችን በመንከባከብ</li> <li>4. ሌላ ካለ ይገለጽ-----</li> </ol>	
115	ከሚቀርቡሽ ሰዎች እና ከዘመዶችሽ በአሁኑ እርግዝናሽ እና በበፊቱ እንዲሁም በምትወለጅበት ጊዜ እና ከወልድ ብሃላ እገዛ (እርዳታ) አግኝተሻል	<ol style="list-style-type: none"> <li>1. አዋ</li> <li>0. የለም</li> </ol>	
116	አዋ ከሆነ ምን አይነት እርዳታ ነዉ ያገኘሽዉ	<ol style="list-style-type: none"> <li>1. የጤና ድርጅት አብሮኝ በመሄድ</li> <li>2. ለትራንስፖርት ገንዘብ በማዘጋጀት</li> <li>3. ልጆችን በመንከባከብ እና የቤት ውስጥ ስራን በማገዝ</li> <li>4. ሌላ ከሆነ ይገለጽ</li> </ol>	

**ክፍል 1. ማህበራዊና ኢኮኖሚያዊ ሁኔታን የሚዳስሱ መጠይቆች**

ተ. ቁ	ጥያቄ	መላስ	ይዘለሉ
117	የቤተሰብ ገቢ ስንት ነው	----- በቁጥር	
118	ከመኖሪያ ቤት ለእስከ ጤና ድረጃ ያለው ርቀት	1. ከ 15 ደቂቃ በታች 2. ከ 15 እስከ 30 ደቂቃ 3. ከ 30 እስከ 60 ደቂቃ 4. ከ 1 ሰዓት በላይ	
119	በእርግዝና ፤ በወሊድ እና ከወሊድ ብሃላ ወደ ጤና ድርጅት ለህክምና እና ለክትተላ ለመሄድ ማነድ የሚወስነው	1. እኔ አራሴ 2. ባለቤቴ 3. ሁለታችንም በጋራ 4. ሌላ ካለ ይገለጽ-----	

<b>ክፍል 1. ማህበራዊና ኢኮኖሚያዊ ሁኔታን የሚዳስሱ መጠይቆች</b>			
ተ. ቁ	ጥያቄ	መለስ	ይዘለሉ

**ክፍል 2 የበሬት እና የአሁን ከ እርግዝና እና ከወሊድ ጋር የተያያዙ ሁኔታዎች**

ተ.ቁ	ጥያቄ	መልስ	ይዘለሉ
201	በመጀመሪያ እርግዝና ሂደት እድሜ ስንት ነው	-----አመት	
202	በህይወት ዘመናት ስንት ጊዜ አርግዘው ያውቃሉ ወረጃንም እንዲሁም በህይወት ያልተወለደን ጨምሮ ?	----- ጊዜ	
203	እስካሁን ካረገዙት መካከል ወረጃ አጋጥሞት ያወቃል	1. አዎ 2. አይደለም	ካሌለ ወይ ጥ205 ይለፉ
204	ለጥያቄ 203 መልሱ አዎን ከሆነ		

ተ.ቁ	ጥያቄ	መልስ	ይዘሉ
	ስንት ጊዜ አሰርዶታል	----- ጊዜ	
205	ከ እርግዝና መካከል ሳይወለድ ሞቶ የተወለደ አለ	1.አዎ 2. አይደለም	ካሌለ ወደ ጥ207 ይለፉ
206	ጥያቄ 205 መልሶ አዎ ከሆነ ሞቶ የተወለደ ስንት ጊዜ አጋጥሟታል	-----ጊዜ	
207	በህይወት ተወለደዉ ያሉ አሁን ስንት ልጆች አሉት	-----ልጆች በቁጥር	
208	በአሁኑ እርግዝና እና በበፊቱ እርግዝና መካከል ምን ህል ወር(አመት) ልዩነት አለዉ	----- ወር	

**ክፍል 3 ለጤና አገልግሎት እቅድ እና አጠቃቀምን በተመለከተ ያላቸው ግንዛቤ እና ዝንባሌ**

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘሉ
301	ለወሊድ መዘጋጀትና ከእርግዝና ከወሊድና ከድህረወሊድ ጋር ተያይዞ ሊከሰቱ ለሚችሉ ችግሮች ቅድመ ዝግጅት ማድረግን በሚመለከት	1. አዎ 0. የለም	መልሶላ የለም ከሆነ ወደ ጥያቄ 304 ይሂዱ

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘላሉ
	የሚያውቁት ነገር አለ?		
302	ጥያቄ 301 መልሶ አዋን ከሆነ ከማን እንደሰሙ ይግለጹ(ከአንድ በላይ መምረጥ ይቻላል)	<ol style="list-style-type: none"> <li>1. ከ ጤና ባለሙያ</li> <li>2. ከጤና ኤክስቴንሽን ባለሙያ</li> <li>3. ከፊደላዊ</li> <li>4. ከቴሌቪዥን</li> <li>5. ከጃደኝ</li> <li>6. ከአካባቢ በጎ ጤና መልክተኛ</li> <li>7. ሌላ ከሆነ ይግለጹ-----</li> </ol>	
303	ምን አይነት ዝግጅት ነው የሰሙት? (ከአንድ በላይ መልስ መጥቀስ ይቻላል)	<ol style="list-style-type: none"> <li>1. የት እንደምወልድ እንዳለብኝ መወሰን</li> <li>2. ትራናስፖርት(መጓጓዣ) ማዘጋጀት</li> <li>3. ገንዘብ መቆጣጠር</li> <li>4. ማን እንደሚያዋልደኝ መለየት</li> <li>5. ደም ካስፈለገ የሚሰጠኝን መፈለግ</li> <li>6. በወሊድ ጊዜ የሚያስፈልገኝን የምግብ ተዋጾ ማዘጋጀት</li> <li>7. የህጻን ልብስ ማዘጋጀት</li> <li>8. ሌላ ከሆነ ይግለጹ -----</li> </ol>	



ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘሉ
304	ከዚህ በፊት ላረገዝሽዉ እርግዝና የእርግዝና ክትትል አድርገሽል	1. አዎ  0. የለም	
305	መልስሽ ለ 304 አዎ ከሆነ በስንተኛዉ ወርሽ ክትትል ማድረግ ጀመርሽዉ	-----ወር	
306	ለጥያቄ 304 መልስሽ አዎ ከሆነ ለምን ያህል ጊዜ የእርግዝና ክትትል አድርገሽል	1. ለ አንድጊዜ  2. ለ ሁለት ጊዜ  3. ለ ሶስት ጊዜ  4. አራት ጊዜ እና ከዚያ በላይ	
307	ለጥያቄ 304 መልስሽ አዎ ከሆነ የእርግዝና ክትትልሽን የት ነዉ ያደረግሽዉ	1. የመንግስት ሆስፒታል  2. የመንግስት ጤና ጣቢያ  3. የጤና ኬላ  4. የግል ጤና ድርጅት  5. ሌላ ከሆነ ይገለጽ	
	ከዚህ በፊት እርግዝናዎ ወቅት የት ነዉ የወለዱት?	1. ቤቴ ውስጥ  2. የመንግስት ሆስፒታል  3. የመንግስት ጤና ጣቢያ  4. የጤና ኬላ	

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘላሉ
308		5. የግል ጤና ድርጅት 6. ሌላ ከሆነ ይገለጽ	
309	ቤት ከሆነ ለምን ቤት ውስጥ መውለድ መረጡ? (ከአንድ በላይ መልስ ይቻላል)	1. የጤና ድርጅቶች ወጪ ብዙ ስለሆነ 2. ጤና ድርጅት ርቀት ስላለው 3. ጤና ድርጅቶች ጥሩ አገልግላት ስለማይሰጡ 4. ሴት ባለሙያ ባለመኖሩ 5. ባለቤቱ ስለማይፈቅድ 6. ከዘመድጋር በመሆን ቤት መውለድ ፈልጎ 7. የልምድ አዋላጆች ስላሉ 8. ምጡ ቀላል ያለና አጭር ስለነበር 9. ከዚያ በፊት ቤት ወልጄ ችግር ስላልነበረ 10. አብሮኝ የሚሄድ ሰው ስላልነበረ 11. አርግዝናዬ ጤነኛ እንደሆነ ተነግሮኝ ስለነበር 12. ትራንስፖርት ስላልነበረ	
310	የጤና ድርጅት ውስጥ ከሆነ የወለዱት ለምን	1. የጤና ድርጅቱ ቅርቤ ስለሆነ 2. የተሻለ አገልግሎት ለማግኘት	

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘላሉ
		3. ከዚህ በፊት በጤና ድርጅት ስወለድ በሰላም ያለችግር ስለወለድኩ 4. ከዚህ በፊት በቤት ውስጥ ስወለድ ያጋጠመኝን ችግር ለመከላከል 5. ከባድ ምጥ ስላጋጠመኝ 6. በጤና ድርጅት እንድወልድ ስለ ተነገረኝ 7. ሌላ ከሆነ ይገለጽ	
311	በምትወልዱበት ጊዜ ማነዉ ያዋለደሽ	1. ዶክተር 2. አዋላጅ ነርስ 3. ነርስ 4. የጤና ኤክስቴንሽን 5. የልምድ አዋላጅ 6. ቤተሰብ 7. ሌላ ከሆነ ይገለጽ	
312	የቅርቡ ወሊድዎ ሁኔታ እንዴት ነበር?	1. በራሱጊዜ በማህፀን 2. በመሳርያ 3. በኦፕሬሽን (C/S) 4. አላስታውስም 5. ሌላ ከሆነ ይጥቀሱ	

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘላሉ
313	ከዚህ በፊት በነበረው እርግዝና/በወሊድ ወይም ከወሊድ በኋላ የገጠሞት የጤና ችግር ነበር?	1.አዎ 2.የለም	የለም ከሆነ ወደ ጥያቄ 321 ይሂዱ
314	ጥያቄ 313 አዎ ከሆነ ምን አይነት የጤና ችግር ነበር ያጋጠሞት?  ከአንድ በላይ መልስ መስጠት ይቻላል	1. ከማህፀን ከባድ የደም መፍሰስ 2. የምጥ ጊዜ መርዘም(ከ12 ሰዓት በላይ) 3. የእንግዶ ልጅ መዘግየት(ከ1 ሰዓትበላይ) 4. የልጁ አመጣጥ ትክክል አለመሆን 5. ማንቀጥቀጥ( አይንን ብዥ ማለት) 6. ከፍተኛ ትኩሳት 7. ሽንት ውሃ ያለጊዜው መፍሰስ 8. ሽንት ወይም ሰገራ መቆጣጠር ያለመቻል 9. የህጻን ሞት 10. መንታ ልጆች መውለድ	
315	በደረሰቦት ችግር ምክንያት ወደ ሌላ ጤና ድርጅት ሪፈር ( እንዲሄዱ) ተደርገው ነበር?	1. አዎ 2. የለም	
316	ለጥያቄ 315 መልሶ አዎ ከሆነ ማነው ለመሄድ የወሰነው	1. እኔ በራሴ 2. ባለቤቴ	

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘላሉ
		3. ሁለታችንም 4. ሌላ የቤተሰብ አባል	
317	ወደ ሌላ ጤና ድርጅት ሪፈር እንዲሄዱ ስደረግ ችግር ገጥሞት ነበር(ከአነድ በላይ መምረጥ ይቻላል)	1. የመጀመሪያ እጥረት 2. የገንዘብ እጥረት ለህክምና እና ለ ትራንስፖርት 3. የሚሄዱበትን የጤና ድርጅት አለማወቅ 4. መሄጃ መንገድ ያለመኖር	
318	ከማን ጋር ሄዱ?(ሪፈር ለተደረጉ)	1. ከባሌ ጋር 2. ከዘመድ 3. ከባሌ እናት ጋር 4. ብቻዬ 5. ከጤና ባለሙያ ጋር 6. ሌላ ከሆነ ይጥቀሱ	
319	ሪፈር ሲደረጉ ምን አይነት ትራንስፖርት ነው የተጠቀሙት ?	1. በእግር 2. በሰው በሽክም 3. በጋራ 5. በመኪና 4. በጤናጣቢያ አምቡላንስ 5. በክራይ መኪና	

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘላሉ
		6. በፈረስ 7. በሞተር ሳይክል 8. ሌላ ከሆነ ይጥቀሱ	
320	ሪፈረ ወደ ተደረግሽበት የጤና ድረጅት እንደደረሰሽ በምን ያህል ሰዓት ውስጥ አገልግሎት አገኛሽ	1. ወዲያው እንደደረሰኩኝ 2. በአንድ ሰዓት ውስጥ 3. በሁለት ሰዓት ውስጥ 4. ከ ሶስት ሰዓት በላይ ቆየኛ	
321	በአሁኑ እርግዝናሽ በስንት ወርሽ የነፍሰጡር ምርመራ ጀመርሽ	በ-----ወር	
322	ለምን ያህል ጊዜ የእርግዝና ክትትል አደረግሽ	1. አንድጊዜ 2. ሁለት ጊዜ 3. ለሶስት ጊዜ 4. ለ አራት ጊዜ	
323	ከተዘረዘሩት አማራጮች በየትኛው የጤና ባለሙያ የነፍሰጡር ምርመራ ተደረገልሽ	1. በይክተር 2. በአዋላጅ ነርስ 3. በጤና መኮንን	

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘላሉ
		4. በነርስ 5. በሌላ ከሆነ ይገለጽ-----	
324	በአሁኑ አርግዝናዎ ወቅት ለወሊድና ከእርግና ከወሊድና ከድህረ ወሊድ ጋር በተያያዘ ሊከስቱ ለሚችሉ ችግሮች ቅድመ ዝግጅት ማድረግ እንደሚገባ ምክር ተሰጥቶት ያወቃል  ?	1. አዎ  0. የለም	
325	በአርግዝናዎ ወቅት ለወሊድና ከእርግና ከወሊድና ከድህረ ወሊድ ጋር በተያያዘ ሊከስቱ ለሚችሉ ችግሮች ቅድመ ዝግጅት ማድረግ እንደሚያስፈልግ ያምናሉ	1. አዎ  0. የለም	
326	በአሁኑ እርግዝናሽ ወቅት በቂ ዝግጅት አድረገሻል	1. አዎ  0. የለም	
327	ለ ጥያቄ 326 መልስሽ አዎ ከሆነ ምን አይነት ዝግጅት ነዉ ያደረግሽዉ (ከአንድ በላይ መምረጥ ይቻላል)	1. የት እንደምወልድ ወስኛለሁ 2. ማን እንደሚያወቅደኝ ወስኛልሁ  3. ገንዘብ ኮጥቤአለሁ  4. ለድንገተኛ ወቅት ትራንስፖርት አዘጋጅቻልሁ	

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘለሉ
		5. ደም ካስፈለገ የሚሰጥ ሰው አዘጋጅቻለሁ 6. የገንድ እህል ወይም ሌላ ምግብ አዘጋጅቻለሁ 7. የህፃን ልብስ 8. ሌላ ካለ ይትቀሱ	
328	የት እንደምትወልጃ አቅደሻል	1. አዎ 0. የለም	
329	328 ጥያቄ አዎ ከሆነ የት ለመውለድ ነው ያቀድሻል	1. መኖሪያ ቤቱ 2. የመንግስት ሆስፒታል 3. ጤና ጣቢያ 4. የግል ሆስፒታል	

**ክፍል አራት : በእርግዝና ወቅት : በምጥ እና ከወሊድ ብኋላ የሚከሰቱትን አደገኛ ምልክቶች መለየት**

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘለሉ
401	በእርግዝናና በወሊድ ወይም በድህረወሊድ ወቅት ከዚህ በተያያዘ ሊከሰት የሚችል የጤና ችግር/አደገኛ ምልክት አለ?	1. አዎ	የለም ከሆነ



ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘለሉ
		2. የለም 3. አላወቅም	ስንብት
402	የ401መልስ አዋ ከሆነ ከየት ሰሙ	1. ከጤና ባለሙያ 2. ከጤና ኤክስቴንሽን ሰራተኛ 3. ከጋደኛዬ 4. ከአካባቢ በጎ የጤና መልክተኛ 5. ከሬድዮ 6. ከቴሌቪዥን 7. ከመጠሪያ ቤቅ አንብቤ 8. ከሌላ ከሆነ ይጥቀሱ	
403	በእርግዝና ወቅት የሚከሰት የእናትን ህይወት ለአደጋ ሊያጋልጡ የሚችሉ ችግሮች አሉ?	1. አዎ 2. የለም 3. አላወቅም	
404	ምን አይነት አደገኛ ምልክት ነው በእርግዝና ጊዜ ሊከሰት የሚችለው? (ምርጫዎቹን መጀመርያ አያንብቡላቸው ምናልባት በራሳቸው መዘርዘር ይችሉ እንደሆን)	1. ከማህፀን ከባድ ደም መፍሰስ 2. የእጅ/ፊት ማበጥ 3. የእይታ መደብዘ 4. ሆድ ውስጥ የህጻኑ እንቅስቃሴ መቀነስ ወይም ማቆም	

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘለሉ
		5. የሽርት ዉሀ ቀድሞ መፍሰስ	
405	በወሊድ ወቅት የሚከሰት የእናትን ህይወት ለአደጋ ሊያጋልጡ የሚችሉ ችግሮች አሉ?	1. አዎ 2. የለም	
406	ምን አይነት አደገኛ ምልክት ነው በምጥ ወይም በወሊድ ወቅት ሊከሰት የሚችለው? (ምርጫዎቹን መጀመርያ አያንብቡላቸው ምናልባት በራሳቸው መዘርዘር ይችሉ እንደሆን)	1. ከማህፀን ከባድ ደም መፍሰስ 2. የምጥ ሰአት መርዘም (ከ12 ሰዓት በላይ) 3. ያልተለመደ የሰውነት መንቀጥቀጥ 4. የእንግዲ ልጅ መዘግየት(ከ1 ሰዓት በላይ) 5. ከፍተኛ ራስ ምታት 6. ማንቀጥቀጥ	
407	ከወሊድ ብሀላ በመጀመሪያዎቹ ሁለት ቀናት ወስጥ የሚከሰቱ የእናትን ህይወት ለአደጋ ሊያጋልጡ የሚችሉ ችግሮች አሉ?	1. አዎ 2. የለም 3. አላወቅም	
408	ምን አይነት አደገኛ ምልክት ነው ከወሊድ በኋላ ሊከሰት የሚችለው? (ምርጫዎቹን መጀመርያ አያንብቡላቸው ምናልባት በራሳቸው መዘርዘር ይችሉ እንደሆን)	1. ከማህፀን ከባድ ደም መፍሰስ 2. ጥሩ ያልሆነ ሽታ ያለው ፈሳሽ ከማህፀን 3. ከፍተኛ ትኩሳት	

ተ.ቁ	ጥያቄ	አማራጭ መልሶች	ይዘላሉ
		4. የእይታ መደብዘ 5. ከፍተኛ ራስ ምታት 6. ማንቀጥቀጥ	

ስለሰጡኝ ጊዜና መረጃ አመሰግናለሁ!!

ጥያቄ:ካሎት!

## APPENDIX 13: OROMIC VERSION OF CONSENT TO PARTICIPATE IN THE STUDY

Anni \_\_\_\_\_ (Maqaa hirmattuu) Anii maqaan koo airman olitti barefamee qorataan qo'annoo kanaa bu'aafi fayyida akasumasii midhaa qo'annoo kuun qabuu halaa gahumsaa qabuun wan naafi ibseefi qo'annoo kan irratti hirmachufi fedhii hin qabaa .

Wantoota Unkka kan irrattii dubisudhaan (akaa naafi ibsameetti ) Wa'ee qoronoo gagefamuu unkaa qophayee irra hubadhee jirraa.

Qo'annoo kan irrattii kan hirmadhuu fedhii kiyyan ta'uu issaafi yaroo barbadee adabii tokkoo malee hirmatuu kiyyaa adan kutuu danda'uu iffaa naaf ta'ee jirraa.

Raggan qo'annoo kan iraa funanamee ergaa walitti kabamee xinxalameen bodaa bu'aan isaa koonfiransii iraatii dhiyatuu dand'auu fi maxanfamaa adaa'daa iraatii ba'uu nidanda'a hata'uu malee maqaan kiyyaa edoo tokkoo iraatii elee akaa hin ibsaamuu fi hiciitii dhan akkaa egamuu hubadhee jirraa.

Dhuum irratti gaffii gafatamuu akkasmass xiyyeefannoo gareenii (FGD) irratti hirmadhuuf waalii galee jirraa .

Gucaa waligaltee malattoo kiyyaa kan ibsuu garagalchaa tokoo fudhacuu kiyyaa nimirkanessaa.

Maqaa gutuu hirmataa \_\_\_\_\_

Malattoo hirmataa \_\_\_\_\_ Guyyaa \_\_\_\_\_ (please print)

Maqaa gutuu qo'annoo gagesuu \_\_\_\_\_

Malattoo qo'annoo gagesuu \_\_\_\_\_ (please print)

**APPENDIX 14: AFAAN OROMO VERSION QUESTIONNAIRE (GAAFFILEE  
AFAAN OROMOOTIN QOPHA'AN)**

Maqaa anaa \_\_\_\_\_ Maqaa Dhabataa Fayya \_\_\_\_\_

Lakoo \_\_\_\_\_

**Kutaa I: Gaffiilee Haala Hawaasummaa fi Dinagdee Kan Agarsiisan**

<b>S.No</b>	<b>Gaaffiiwwaan</b>	<b>Deebiiwwan ta'uu kan danda'an</b>	<b>Gara itti aanutii ceehii</b>
101	Yeroo amma kana umriin kessaan meeqa?	Umrii waggadhan _____	
102	Bakee tessoo Jirenyaa	1. Magalaa 2. Badiyyaa	
103	Halaa fudhaafi Herummaa	1. Heerumeera 2. Walihikneera 3. wajjinin jiranaa 4. Irraa du'e 5. Hinheerumne	
104	Sadarkaa Barumsa ishee ?	1. Duubisufi baresuu 2. Duubisufi baresuu kan hinda'ndenyee 3. Sdarkaa tokoofaa 4. Sdarkaa lammafaa 5. Koleejiifi achii olii	
105	Sadarkaa Barumsa abaa warraa	1. Duubisufi baresuu 2. Duubisufi baresuu kan hinda'ndenyee 3. Sdarkaa tokoofaa 4. Sdarkaa lammafaa 5. Koleejiifi achii olii	
106	Amantii kamiin hordoftan?	1. Ortoodoksii	

		2. Musliima 3. Prooteestantii 4. Katoolikii 5. Kan birraa	
107	Saba kamii?	1. Oromoo 2. Amaara 3. Guraagee 4. Kan biroo	
108	Hojiin kessaan maalii?	1. Haadha Mana 2. Qotee bulaa 3. Daldalaa 4. Hojjata mootumma 5. Hojjata hojii guyyaa 6. Barataa 7. Hajatuu manaa 8. kan bira (haa ibsamu)	
109	Galii ji'aa	_____ QR Ityoophiya	
110	Abbaan Mana keessan maali hojjataa?	1. Qotee bula 2. Hojjata mootumma 3. Daldalaa 4. Hojjata hojii guyyaa 5. Barataa 6. Hojii dhuunfa	
111	Ji'atti galiin aba waraa kessaan mee qaa?	Birrii _____	
112	Moobayilii dhunfaa dhan ni qabdanii	1. Eyye 2. Miti	
113	Yoo herumtee ta'ee	1. Eyye 2. Miti	
	Yaroo ulfaa amaa ,ulfaa duranfi yaroo dahumsa fi dahumsa bodee qarqarsaa abba waraa kee iraa argatee jirtaa		
114	Debiin gafii 113 yoo eyye ta'ee qarqarsaa maal sii latee	1. dhabata fayya wajinin demuu 2. Qarshii gejjibaa qophesuu	

		3. ijoolee kununsuufi hojii mmana qarqaruu dhan 4. kanbiraa yoo jirratee ibsii	
115	Yaroo ulfaa amaa ,ulfaa duranfi yaroo dahumsa fi dahumsa bodee qarqarsaa firraa yokkan olaa irra argatee jirtaa	1. Eyye 2. Miti	
116	Debiin gafii 115 yoo eyye ta'ee qarqarsaa maal sii lataanii	1. dhabata fayya wajinin demuu 2. Qarshii gejjibaa qophesuu 3. ijoolee kununsuufi hojii mmana qarqaruu dhan 4. kanbiraa yoo jirratee ibsii	
117	Bayinaa mattii kee	_____ lakoofsaan	
118	Yaroo dhan Fageenya iddoo jireenyaa mana yaala irra qabuu	1. Daqiqaa 15 gadii 3.30-60 2. Daqiqaa 15-30 4. Sa'aa 1 olii	
119	Tajaajila ulfaa da'umsaa fi da'umssaan boodee argachufi enyuttu murteesaa?	1.ofii kiyaa 2.Abbaa warra 3. Nuulachuu 4. yoo kanbirraa ta'ee ibsii_____	

**Kutaa II: Seenaa haala ulfaa fi da'uumsaa wajjin walqabatee**

S.No	Gaaffi waan	Debiwwan taa'uu kan da'an	Gara itti aanutii ceehii
201	Yaroo ulfaa jalqabaa umriin kee meeqa	wagaa_____	
202	Hangaa amatti yeroo hagam ulfooftee jirtaa, kan garaa dhaa bayeesi du'ee kan dhalatee yojiratee dabalatee	_____ lakkoofsan	
203	Asiin dura ulfi ji'a torba osoo hin genne isin irraa bahee jiraa?	1.Eyye 2. Miti	
204	Deebin lakoo 203 yoo eyye ta'ee Ulfii isin irraa bahee hangam?	Lakoofsaan_____	

205	Garaa kee kessaa du'ee kan dhalatee jirra	1. Eyye 2. Miti	
206	Gaffin lakoo 205 yoo eyye ta'ee garaa kee kessaa du'ee kan dhalatee meqaa	Lakoofisaan _____	
207	Ejoolee lubudhan jirata'an meqaa	Lakoofisaan _____	
208	Ulfii amaaa garaa dhaa qbduufi kanduran desse ji'aa meqaan walcaalani	Ji'aa _____	

### Kutta III: Fayyadama tajajilaa ,karoora fi hubannoo kan ilaluu

S.No	Gaaffiwaan	Deebiwwan ta'uu kan danda'n	Gara itti aanutii ceehii
301	Odeeffannoo wa'ee qophii da'uumsaa fi midhaa salphisuu irratii qabdaa	1. Eyyee 0. Miti	
302	Gaffiin lakkoo 301 yoo eye ta'ee maddii odeeffanno issaa akka argatee ibssii	1. Ogessaa fayyaa irraa 2. Exteenshinii fayya irraa 3. Raaddiyoo 4. Televizihii 5. eriyaa kee irraa 6. hojataa fayaa umataa 7. yoo kan birraa ta'ee ibsii	
303	wa'ee qophii da'uumsaa fi midhaa salphisuu irratii malmal qophii gotee	1. edoo itti dayaan adaan basuu 2. Geejjibaa yarroo atantaamaa 3. qarshii cimissuu	



		<p>4. ogessaa fayaaa ada'an basuu</p> <p>5. Namaa dhugaa arjoomuu</p> <p>6. minaan nyataaf kanta'uu qophesuu</p> <p>7. uffataa da'maa dalatuuf</p> <p>8. kanbiraa yota'ee ibsii _____</p>	
304	Ulfa duraa irraa hordofii ulfa gotee jirtaa? (ulfaa assin durraa kanjiruu)	<p>1. Eyye</p> <p>0. Miti</p>	
305	Debiin gafii 304 eyye yoo ta'ee jia'aa meqattii tajajiilaa argatee	Ji'aa _____ irratti	
306	Debiin gafii 304 eyye yoo ta'ee siyaa meqaa hordofii fi dedebitee	<p>1. yaroo tokkoo</p> <p>2. yaroo lammaa</p> <p>3. yaroo saddii</p> <p>4. Afuurif achii olii</p>	
307	Debiin gafii 304 eyye yoo ta'ee dhabataa fayyaa kam hordofii gotee	<p>1. Hospitalaa mootumaa</p> <p>2. Buufataa fayyaa motumaa</p> <p>3. Dhabataa health postiii</p> <p>4. Dhabataa fayyaa dhunfaa</p> <p>5. kanbirraa yoo ta'ee ibsii _____</p>	
308	Ulfa Kanaan dura desee eessatti dhaltee	<p>1. Manattii</p> <p>2. Hospitalaa mootumaa</p> <p>3. Hospitalaa dhuunfaa</p> <p>4. Buufataa fayyaa</p> <p>5. Dhabataa health postiii</p>	
309	Yoo manuumaa kee desee maaliif mana da'uu filatee	<p>1. Qrshiin kafaltii guda waan ta'eef</p> <p>2. Dhabanii fayyaa fagoo waan ta'efi</p> <p>3. Kununsii dhabataa fayyaa shagaa mootii</p> <p>4. Ogessaa fayyaa dubartii wan hinqabaniif</p>	

		<p>5. Abbaan waraa koo fedhii wan hinqabaneffi</p> <p>6. Harrkaa warraa koo irratti da'uu waan filadhefii</p> <p>7. Desistuu Add'aa waan qayyee jirtuufii</p> <p>8. Cininsuun kiyyaa sulphaa waan ta'eefii</p> <p>9. Kanan duuraa yerroo dayuu rakkoon waan naa hinqoonamneefii</p> <p>10. Namnii naa waajjinin dhabataa kan naa fudhatuu waan hinjiiraneefi</p> <p>11. Ulfii kiyyaa akkaa midhaa hinqabanee waan nafi himameefii</p> <p>12. Geejibaa waan dhabeefiii</p>	
310	Yoo dhabataa fayyaa deseemaalif filatee	<p>1. Dhabanii fayyaa dhiyoo want'eefi</p> <p>2. Tajajilaa garii argacuufi fedhii waan qabuufi</p> <p>3. Kanan duraa yaroo da'uu dhabataa fayyaa yoo da'uu garii waan ta'efii</p> <p>4. Rakkinnaa kanan duraa umamee akka naatti hinqoonamnee</p> <p>5. Ciininsuu midhaa qabuu want'eefii</p> <p>6. Dhabata fayyaa akka da'uufi waan natti himameefi</p> <p>7. Kan birraa yoo ta'ee ibsii_____</p>	
311	Kanan duraa yerroo desuunenyyutuu sidesisee (delivery before this ).	<p>1. Doktoora</p> <p>2. Midwifii</p> <p>3. Nursii</p> <p>4. Extenshinii fayyaa</p> <p>5. Dsistuu Adaa/TBA/TTBA</p>	

		6. Maattii 7. yoo kan birraa ta'ee ibssii	
312	Akkataa kamiin desee	1. attantamaa naffaa saalattin 2. Meeshaa dhan gargaramee 3. Opreshinii dhan 4. Irraafadhee jirraa 5. Yoo kan biraa ta'ee ibsii _____	
313	Yaroo assin duraa da'ima desuu rakinii siqoonee jirraa	1. Eyye 2. Miti	
314	Gaffin 313 eyye yoo ta'ee rakkini siqoonee maalii inii	1. Dhigaa bayyee naa raa dhang'ala 2. Ciininsuun sa'aa 12 olii nattii turee 3. Obattin sa'aa 1 olii nattii turee 4. Da'imnii falaa dhan dhalatuufi dhufuu issaa 5. Nafaa kiyyaa hoolachisuu/ijaa qanqee nattii mulatuu 6. Nafnii kiyyaa o'aa guda qabuu 7. Bishaan fulaa yerroo malee jiguu issaa 8. Fincaanif boola qabachuu hindandenee 9. Da'iimnii du'ee dhalatuu 10. Lakkuu ulfa'uu koo	
315	Dhabataa birratii tajajilaa foyyee akka argatuu eergamtee jirtaa	1. Eyye 2. Miti	
316	Debiin lakoo 315 yoo eyyee ta'ee enyuu tuu garaa dahabataa birrafi demuufi murtesee	1. Offii kootinii 2. Abaa warraa kiyyaa 3. Nu lachuu 4. Mattii kiyyaa	

317	Dhabataa birratii tajajiilaa foyyee akka argatuu yerroo eergamtuu rakkiini siqoonamee mall inii (deebbii tokkoo ollii nii danda'amaa	1. Hanqinaa gejiibbaa 2. Gejiibbaafi kanta'uu qarshii dhabuu 3. Eddoo ittin ergamee essaa akka ta'ee argachuu dhabuu 4. Karraa (Dandii) qonamsiisuu jirraachuu dhabuu	
318	Yarroo ciininsuu enyunii siiwajjinin demee	1. Abbaa warraa 2. Fiirrii koo 3. Hadha abba warraa kiyaa 4. Kooba koo 5. Ogeessaa fayyaa waliin 6. Yoo kan birraa ta'ee ibsii	
319	Dhabataa birratii tajajiilaa foyyee akka argatuu yerroo eergamtuu geejjibaa ittin fayadamtee malli inii	1. Lafoo 2. Namoonii nabatanii 3. Garii fardaa 4. Ambuullansii dhabataa dhaan 5. Koonkoolataa kirraa dhan 6. Fardaan 7. Mootoraan 8. Kan birraa yoo ta'ee ebsii	
320	Dhabataa birratii tajajiilaa foyyee akka argatuu yerroo eergamtuu ergaa dhabataa harawwaa yerroo hangaam kessattii tajajiilaa argatee	1. Bataluumatii yeruumaa dhaqabee tii 2. sa'aa tokkoon boodaa 3. Sa'aa 2 4. Sa'aa sadii ollii	
321	Ji'aa meqaffaa tii qormataa ulfaa ulfaa amaa ulfooftee jalqabdee	Ji'aa_____tii	
322	Qoormataa ulfaa yeroo meqaa ulfaa amaafii gargatee	1. siyaa tokkoo 2. siyyaa lamaa 3. Siyaa sadii 4. siyyaa afuurii	
323	Ogessaa fayyaa kaminii lalamtee	1. Dooktooraan 2. Midiwifii (Nursii desistuu)	

		3. Ondalaa fayyaattin 4. Nuursii dhan 5. yoo kanbirraa ta'ee ibsii	
324	wa'ee qophii da'uumsaa fi midhaa salphisuu irratii yerroo ulfaa kanaa goorssaa argatee jirtaa	1. Eyye 1. Miti	
325	wa'ee qophii da'uumsaa fi midhaa salphisuu irratii yerroo ulfaa goorsaa argachuun bu'aa qabbaa ?	1. Eyye 0. Miti	
326	Ulfaa amaatiif qoophii gootee jiirtaa	1. Eyye 2. Miti	
327	Debiin gaffii lakoo 326 eyye yoo ta'ee wa'ee qophii da'uumsaa fi midhaa salphisuu irratii malmail qophii gootee ( Debi tokoo olii filacuu niddnda'maa)	1. edoo itti dayaan adaan basuu 2. Geejjibaa yarroo atantaamaa 3. qarshii cimisuu 4. ogessaa fayyaa ada'an basuu 5. Namaa dhugaa arjoomuu 6. minaan nyataaf kanta'uu qophesuu 7. uffataa da'maa dalatuuf 8. kanbirraa yota'ee ibsii	
328	Eddoo bakee ittii desuu karoofatee jirtaa ?	1. Eyye 0. Miti	
329	Gafii lakoo 328 yoo eye ta'ee Eddoo bakee ittii desuu karoofatee essaa	1. Mana girenyaa koo 2. Hoospitalaa mootumaa 3. Buufata fayyaa 4. Hoospitalaa dhunfaa	

**Kutaa IV: Malattoowan midhaa luubuu dabaarsuu danda'aani yerroo ulfaa, ciininsuu fi dayyissan bode kan umamaan adaanbasuu kan ilaluu**

S.No	Gaffiwaan	Debiwwaan ta'uu kan danda'an	Gara itti aanuti ceehi
401	Akkaa ilalchaa kettin wantooni hinmulanee ulffaa,ciininsuu fi daumsaan boodee kan umamaan midhaa luubuu saxilluu danda'an jatee yadaa	<ol style="list-style-type: none"> <li>1. Eyye</li> <li>2. Miti</li> <li>3. Hinbekuu</li> </ol>	
402	Gaffii lakoo 401 eyye yota'ee maddii odeefannoo kee enyuu (tokoo olii debii kenuu nidanda'amaa)	<ol style="list-style-type: none"> <li>1.Ogessaa fayyaa</li> <li>2. Hoojjatuu extenshinii fayyaa</li> <li>3. Hiriyyaa irraa</li> <li>4. rayyaa fayyaa gandaa irraa</li> <li>5. Radiyyoo</li> <li>6. Televisinii</li> <li>7. Barefamaa duubisuu dhan</li> <li>8. yoo kan birraa ta'ee ibssii_____</li> </ol>	
403	Yaroo ulfaa malattoo waan lubuu saxiluu danda'an nibektaa	<ol style="list-style-type: none"> <li>1. Eyye</li> <li>2. Miti</li> </ol>	
404	Deebin gaffii lakko 403 eyye yoo ta'ee malattoo waan lubuu saxiluu danda'an maalmaal ta'uu danda'an	<ol style="list-style-type: none"> <li>1. Dhiignii bayyee jiiguu</li> <li>2.Harrkkafii milii dhita'uu</li> <li>3. Kankee ijaa irraa ofuu</li> <li>4. Ulfii garaa kessattii ssochoa'uu dhabuu</li> <li>5. Bishaan fulaa yerroo malee jilguu (PROM)</li> </ol>	
405	Yaroo ciininsuu malattoo waan lubuu saxiluu danda'an nibektaa	<ol style="list-style-type: none"> <li>1. Eyye</li> <li>2. Miti</li> </ol>	
406	Deebin gaffii lakko 405 eyye yoo ta'ee malattoo waan lubuu saxiluu danda'an maalmaal	<ol style="list-style-type: none"> <li>1. dhignii bayyaa jiguu</li> <li>2. O'aa naffaa dabaluu</li> </ol>	

	ta'uu danda'an (Please first do not read the option for the client to understand whether they list immediately or not)	3. foolii badaa naffaa salaa irraa fufachuu 4. Kankee ijaa irraa ofuu	
407	Yaroo da'uumsan boodee malattoo waan lubuu saxiluu danda'an <b>nibektaa kessatuu guyaa 2 kessattii ergaa deeseen boodaa</b>	1. Eyye 2. Miti	
408	Akka yadaa kettitii Yaroo da'uumsan boodee malattoo waan lubuu saxiluu danda'an maal maal bekita, <b>kessatuu guyaa 2 kessattii ergaa deeseen boodaa</b>	1. 1. dhignii bayyaa jiguu 2. O'aa naffaa dabaluu 3. foolii badaa naffaa salaa irraa fufachuu 4. Kankee ijaa irraa ofuu 5. Mataa boowoo 6. Holechisuu	

**Waan hirmatanifii bayee galatoomaa, yoo gafii qabdani gafachuu ni danda'amaa .**

## APPENDIX 15: FGD GUIDING QUESTIONS FOR PREGNANT WOMEN

### I. Socio-demographic information of participants

<i>Code</i>	<i>Age</i>	<i>Gravida</i>	<i>Para</i>	<i>Marital status</i>	<i>Religion</i>	<i>Residence</i>	<i>Educational status</i>	<i>Occupation</i>	<i>Monthly Income</i>
<i>P1</i>									
<i>P2</i>									
<i>P3</i>									
<i>P4</i>									
<i>P5</i>									
<i>P6</i>									
<i>P7</i>									
<i>P8</i>									
<i>P9</i>									
<i>P10</i>									
<i>P11</i>									
<i>P12</i>									

Name of facilitator \_\_\_\_\_ Signature \_\_\_\_\_

Date \_\_\_\_\_

Name of Note Taker \_\_\_\_\_ Signature \_\_\_\_\_

Date \_\_\_\_\_

### II. Guide questions for focus group discussion among pregnant women

1. Which health problems can be encountered by a woman in your living area during

A. During pregnancy



B. During labour and delivery

C. During the first two days of postpartum period after giving birth

2. What support or practice is available at family and community level (rather than health facility) to women during

A. Pregnancy

B. Labour and Delivery

C. During the first two days of postpartum period after giving birth

3. If women encountered a series of problems during pregnancy or child birth, and needs to have referral, is it possible to access referral service without delay?

A. If she gets immediate referral what are the mechanism at individual or family level and community level that facilitate referral system.

B. If she did not get immediate referral service, what are the difficulties?

4. How do you looking the ANC use of pregnant women in your community

A. Do the majority attend ANC service, when do they start? how they attend frequently?

B. What are the major barriers that hinders pregnant women not to attend ANC service?

5. How do you see the delivery service use of pregnant women in your community?

A. Where do most of them gave birth? Why they prefer this?

4. What kind of preparation is the women doing to save birth and to overcome birth complications?

5. what are the advantage of early preparation during pregnancy, labour, delivery and postpartum period, for the mother and new born? Please explain the process of taking the history of your neighbour, friends and others with good preparation and poor preparation that play a role in the outcome of save **pregnancy, childbirth** and **postpartum**.

6. Can you mention the obstacles that hinder the women not to prepare for birth preparedness and complication readiness action at;

A. Individual or women level

B. Family level    C. Community level

7. Are you satisfied or not satisfied with the given service by health professionals?

A. Please mention, how you were **satisfied** with the service given to you during **pregnancy, labour, delivery** and **postpartum** period

B. Please mention how you were **dissatisfied** with the service given to you during **pregnancy, labour, delivery** and **postpartum** period.

8. What kind of **strategy** will you propose to improve the current maternal health service during **pregnancy, labour, childbirth** and **postpartum** period, if it needs to be changed and to be comfortable for mothers

Thank you! If you have any question, you can ask

## **APPENDIX 16: INTERVIEW GUIDE FOR HEALTH PROFESSIONALS**

### **I. Information sheet of in-depth interview participants**

My name is \_\_\_\_\_ I'm working as data collector in the study will be conducted by student Solomon Tejineh Mengesha for undertaking his thesis for the PhD in public health in health studies at the University of South Africa (UNISA). His research entitled with "Strategies to improve Birth preparedness among pregnant women attending ANC clinics in selected health facility of Oromia region Arsi zone, ".

#### **Purpose of the research**

The purpose of this study is to determine birth preparedness and developing strategies to improve services among pregnant women in Arsi zone. The finding of this study will be used to plan strategies to improve the services that can increase utilization of obstetric services and minimize maternal complications during pregnancy, childbirth and postpartum periods.

#### **Procedures**

You are purposively selected for this in-depth interview/FGD. I would like to discuss with you few questions concerning birth preparedness complication readiness and strategies to improve the services, so that you can generate idea and suggestions for intervention through discussing the questions. The discussion will be taking about 1 hour. I would like to ask you your voluntariness participation?

#### **Risk and discomfort**

Unless the discussion may take some of your time, this study has no physical or psychological risk and discomforts. we will try to make the time short as much as possible by guiding you to the points based on interview guide.

#### **Benefits**

There will be no direct benefits to you but based on the information you will be provided for us; it helps to build strategies to improve the interventions targeted to birth preparedness complication readiness services.

## Confidentiality

Your confidentiality will be ensured by keeping sensitive information found in data collection tools. Code will be used instead of name of participants throughout the study process. The finding of this study will be processed into a research report, journal publications and/or conference proceedings, but your participation and your personal issues will be kept confidential.

## The right to withdraw from the study

You have the right to withdraw from this discussion to which you are not comfortable. you are not forced to answer the questions that you are not like to answer. However, your active participation and valuable response have a great importance in improving maternal health services during pregnancy child birth and postpartum periods.

## Interview guide for health professionals

Name of District \_\_\_\_\_

Name of health facility\_\_\_\_\_

Name of interviewer \_\_\_\_\_

Date of interview \_\_\_\_\_

### I. Socio-demographic information of participants

Participants code	Age	Sex	Profession	Responsibility in health facility	Year of experience

### II. Interview guide question for health professionals




Describe the experience of offering birth preparedness complication readiness practice among pregnant women in your district

1. From pregnant mother attended ANC in last year, how many of them planed for birth preparedness and complication readiness practice in last year? (Please mention in number and percentage).

2. What are the activities being provided in your health facility to create awareness of birth preparedness complication readiness practices?
3. What are the benefits of birth preparedness and complication readiness practices for the mother, new born, family, and the community?
4. What are the challenge of birth preparedness and complication readiness?
5. What are the intervention strategies you are currently implementing to improve birth preparedness complication readiness in your facility?
6. What intervention strategies do you suggest to improve birth preparedness and complication readiness for the future.?

Thank you for your participation!!

## APPENDIX 17: STATISTICIAN CONFIRMATION LETTER

<p>Tajaajila Gorsa Qorannoo fi Leenjii Wiizdom ጥናድ ምርመራና ስልጠና ማማከር እገልግሉት Asallaa, Itoophiyaa      አሰላ, ኢትዮጵያ</p>		<p><b>Wisdom Research &amp; Training Consultancy</b> Asella, Ethiopia</p>
<p>Date ቀን <u>10/11/2022</u> Ref.No/ቁጥር <u>WRTC/09/22</u></p>		
<p style="text-align: center;"><b><u>To whom it may concern</u></b></p>		
<p>I had checked and consulted all quantitative statistical data analysis of the research entitled with “ <b>Development of strategies to improve birth preparedness among pregnant women attending ANC clinic in Arsi Zone, Oromia, Ethiopia</b>” conducted by a PhD student <b>Mr. Solomon Tejneh</b>. Close monitoring was done through all steps of data analysis in collaboration with Mr Solomon Tejneh to fit the required statistics result.</p>		
<p>Regards,  Mesfin Tafa Segni (MPH, Assistant Professor of Epidemiology) ጠቅላይ ማ. ስ.ፈ. (ሬዲዮ ፕሮፌሰር) General manager.</p>		
		
<hr/> <p style="text-align: center;">Contact Address</p> <p>Mobile: +2519-11-84-06-09/09-65-65-82-82; Office Tel: 0222183241 PO.Box 234      Email: <a href="mailto:wisdomtc20@gmail.com">wisdomtc20@gmail.com</a> telegram: <a href="https://t.me/wisdomtc">https://t.me/wisdomtc</a>      Website: <a href="http://WWW.wisdomtc.com">WWW.wisdomtc.com</a> Motto: Evidences For Better Decision!</p>		

## APPENDIX 18: EDITING FORMATTING AND PROOF-READING CERTIFICATE

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21 December 2023

### Editorial Certificate

To Whom It May Concern,

This certificate confirms that the thesis entitled; **STRATEGIES FOR IMPROVING BIRTH PREPAREDNESS AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE CLINICS AT PUBLIC HEALTHCARE FACILITIES OF ARSI ZONE IN OROMIA, ETHIOPIA** by **SOLOMON TEJINEH MENGESHA** (student number: **67146074**) was edited by an expert English editor with a PhD. The following issues were corrected: grammar, spelling, punctuation, sentence structure, phrasing, and formatting.

Signed on behalf of NIM Editorial by:

A handwritten signature in black ink, appearing to be 'Dr N.I. Mabidi', written over a horizontal dotted line.

.....  
Dr N.I. Mabidi  
Founder & Chief Editor

## APPENDIX 19: TURNITIN ORIGINALITY REPORT

STRATEGIES FOR IMPROVING BIRTH PREPAREDNESS AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE CLINICS AT PUBLIC HEALTHCARE FACILITIES OF ARSI ZONE IN OROMIA, ETHIOPIA

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