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LIST OF ACRONYMS AND ABBREVIATIONS

ANC	Antenatal care
AOR	Adjusted odds ratio
CI	Confidence interval
COMBI	Communication for behavioral impact
COR	Crude odds ratio
CSA	Central Statistical Agency
DC	Delivery care
DHS	Demographic and Health Statistics
EDHS	Ethiopian Demographic and Health Survey
ETB	Ethiopian birr
FMOH	Federal Ministry of Health
GTP	Growth and Transformation Plan
HEP	Health Extension Program
HIV	Human immunodeficiency virus
HSDP	Health Sector Development Program
HSDP	Health Sector Development Plan
HSTP	Health Sector Transformation Plan
ICPD	International Conference on Health and Development
MCH	Maternal and child health
MDG	Millennium Development Goal
MMR	Maternal mortality ratio (Maternal deaths per 100,000 live births)
MSF	Médecins Sans Frontières (Doctors Without Borders)
NGO	Non-governmental organization
OR	Odds ratio
PNC	Postnatal care
PPH	Postpartum hemorrhage
SBA	Skilled birth attendant
SDG	Sustainable Development Goal

SNNP	Southern Nations, Nationalities, and Peoples' (Region)
SPSS	Statistical Package for the Social Sciences
TBA	Traditional birth attendant
UN	United Nations
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
UNISA	University of South Africa
USAID	United States Agency for International Development
WHO	World Health Organization

CHAPTER 1
ORIENTATION TO THE STUDY

1.1 INTRODUCTION

In this introduction section, aspects including maternal mortality and maternal health care services utilization at global and national levels are discussed.

According to the World Health Organization (WHO 2015a:1), mothers die due to complications of pregnancy and child birth. Almost all of the deaths occurred in low-resource settings and most of these deaths could have been prevented. The primary causes of death are hemorrhage, hypertension, infections, and indirect causes, mostly due to interaction between pre-existing medical conditions and pregnancy (WHO 2005:1). The risk of a woman in a developing country dying from a maternal-related cause during her lifetime is approximately 33 times higher compared to a woman living in a developed country (WHO 2015a:1).

The maternal mortality ratio (MMR) in developing regions is 14 times higher than in developed regions. Only half of pregnant women in developing regions receive the recommended minimum of four antenatal care (ANC) visits(United Nations [UN] 2015:8).The UN, under its Sustainable Development Goals (SDGs) for the year 2030, has set a target to reduce the MMR to less than 70 per 100,000 live births (UN 2015:16). The World Bank (2015:1)report on the MMR in Ethiopia for the years 2011 to 2016 predicted that it will be 353 per 100,000 live births. However, the MMR in Ethiopia is still high. Relentless efforts need to be exerted to reduce the MMR, despite the fact that the global MMR has declined by 70% from 1,400 to 420 per 100,000 live births for the period 1990 to 2013 (WHO, United Nations International Children's Emergency Fund [UNICEF], United Nations Fund for Population Activities [UNFPA], The World Bank & the UN Population Division 2015:1).

The Afar Regional State still has low maternal healthcare services utilization with ANC coverage of 32%, delivery services of 8%, and postnatal care utilization of 6%. Hence, it is crucial to discover the determinant factors for maternal healthcare services utilization

in the Afar National Regional State, where these problems still exist (Central Statistical Agency [CSA] of Ethiopia 2014:46).

1.2 BACKGROUND TO THE RESEARCH PROBLEM

The WHO, UNFPA, the World Bank, and the UN Population Division in their 2014 report, *Trends in Maternal Mortality: 1990 to 2013*, stated that Africa accounts for the highest burden of global maternal deaths. In 2013, approximately 289,000 women worldwide died during pregnancy or childbirth, and of those deaths 62% occurred in sub-Saharan Africa. The report added that in 2013, the MMR in developing countries was 230 women per 100,000 births, versus 16 women per 100,000 in developed countries (WHO et al. 2014:21).As sub-Saharan countries strive for universal health coverage, future health policies and interventions must be strengthened to increase the use of maternal care services and being more able to address the disparities in the utilization of maternal care, especially for those who are poor and live in rural areas in sub-Saharan African countries (Alam, Hajizadeh, Dumont& Fournier 2015:13).

Although ANC attendance and skilled birth attendant (SBA) utilization ensure safe motherhood and contribute to reducing the MMR, significant variations in estimating the MMR is seen in various studies, which calls for more robust and locally generated information (Health Sector Transformation Plan 2015:24). A study conducted in Afghanistan indicated that educating mothers and increasing their awareness of the danger signs of pregnancy may lead to higher utilization rates of ANC and SBA, where 46.0% of the respondents did not use ANC and 52.6% of them gave birth without an SBA (Shahram, Hamajima & Reyer 2015:9).

1.2.1 Maternal healthcare in sub-Saharan Africa

A study conducted in the Sudan revealed that the limited availability of health facilities and health staff at the community level is a crucial factor that restricts nomadic women's access to healthcare services (El Shiekh &Van der Kwaak 2015:10).The low utilization of maternal health care services subjects women to high risks that lead to unfavorable consequences and increase the likelihood of maternal morbidity, mortality, and disability.

Many factors influence utilization; in general, they are the same as in other nomadic areas in Africa. The utilization of services is affected by low levels of education and health awareness. The mobile lifestyle of nomads and gender inequality also act as major challenges that restrict women's utilization of maternal healthcare services (El Shiekh & Vander Kwaak 2015:8).

Despite the high number of ANC among mothers, a notable number of pregnant women, especially among slum residents, still choose to deliver at home (Tebekaw, Mashalla & Tshweneagae 2015:6). Most of the deaths of women occur in settings with low resources that could have been prevented. In Ethiopia, with the target of reducing the MMR to 267 per 100,000 live births, a set of interventions were implemented, including ANC, SBA, and postnatal care (PNC) (Federal Ministry of Health [FMOH] 2015:25).

On the other hand,41%of women who gave birth received ANC from a skilled provider, namely from a doctor, nurse, or midwife, for their most recent births (CSA 2014:41). One woman in every three (32%) made four or more antenatal visits during the course of their pregnancy from 10% in 2000. Percentages of facility births continue to be low in Ethiopia (16%),with only 13% of women who receive PNC within the first two days of delivery (CSA 2014:42). It took over 25 years for Ethiopia to reduce child mortality by 70% and maternal death by 75%. Nevertheless, the Ethiopian government has set an ambitious goal aimed at reducing the child and maternal death rate by half in the next five years (FMOH 2015:96).

A study conducted in Oromia Region, Dodota woreda, indicated that only 18.2% of the mothers gave birth to their last baby in a health facility. Urban residence, the educational level of mothers, pregnancy-related health problems, and decisions made by husbands or relatives showed a significant association with the utilization of delivery services (Fikre & Demissie 2012:3). A similar study conducted in South Sudan revealed that educated mothers who had three and more complications during pregnancy, mothers who had at least one to three ANC visits, and mothers from rich households were significantly more likely to use an SBA at delivery (Mugo, Agho & Dibley 2014:1).

According to Hey (2015:24), the education of the mother is a determinant of immunization completion. Mothers who attended school up to secondary level and above were twice as likely to complete the immunization of their children than mothers with no education. Hey (2015) further reported that fathers who attended secondary level and above were four times more likely than the ones who have no educational background to complete immunization. In Afar Region, the percentage of women currently pregnant decreases with increasing levels of education, from 10% among women with no education to 2% among those with secondary education.

On the other hand, rural women were more likely(8%) to be pregnant than urban women (4%). The highest percentage of women who were pregnant in Afar Region was 14%, while the lowest percentage in Addis Ababa was 3%. Similarly, current pregnancy decreases as household wealth increases (CSA 2014:38).

1.3 RESEARCH PROBLEM

The 2016 Ethiopian Demographic and Health Survey (EDHS) indicated that 62% of women who gave birth in the five years preceding the survey received ANC from a skilled provider at least once for their last birth. Three in ten women (32%) had four or more ANC visits for their most recent live birth. Urban women were more likely than rural women to have received antenatal care from a skilled provider (90% and 58% respectively) and to have had four or more antenatal care visits (63% and 27% respectively). The proportion of women who had four or more antenatal care visits in Afar Region was 20.6%, which is the second lowest among all regional states in Ethiopia next to that of Somali Regional State. The survey also indicated that 80% of the births of urban mothers were assisted by a skilled provider and 79% were delivered in a health facility, as compared with 21% and 20% respectively of the births of rural women. Afar Region has the lowest percentage of women whose births were delivered by a skilled provider or delivered in a health facility (16% and 15% respectively), while Addis Ababa has the highest percentage(97%) for both indicators. The percentage of women receiving a postnatal checkup within two days of delivery is higher in urban areas than in rural areas. The percentage of women who had a postnatal checkup in the

first two days after birth in Afar Region was 11.6%, which is the lowest among all regional states in Ethiopia (CSA 2016:23-24).

A considerable number of women in Holeta Town, central Ethiopia, had less than four visits during their most recent pregnancy (Birmeta2013:1). A cross-sectional study conducted in the northern part of Ethiopia, in Tigray, Enderta woreda, indicated that women's own monthly income and their knowledge of danger signs that could occur during pregnancy could influence ANC utilization. The husbands' educational status is associated with women's decision to deliver at a health institution (Aregay, Alemayehu, Assefa & Terefe 2014:117-125). A study conducted in the Assyta and Dubti towns of the Afar Regional State also showed similar results regarding the association of the husbands' attitude with women's decision to deliver at a health facility (Fanta 2005:54).Since the maternal healthcare utilization in the study area is very low, according to the 2016 EDHS, it is important to conduct a research study on the factors that influence ANC, delivery care (DC), and PNC services utilization in Awash Fentale woreda, Zone 3 of Afar National Regional State, in Ethiopia.

1.4 THE AIM OF THE STUDY

1.4.1 Research purpose

The purpose of this study is to assess the factors that influence maternal health care services utilization by women in Awash Fentale woreda, Ethiopia.

1.4.2 Research objectives

This research aims to achieve the following objectives:

1. To explore and describe the factors that influence ANC, DC, and PNC services utilization by women in Awash Fentale woreda.
2. To examine the preferences of women in terms of maternal health care services.
3. To identify barriers to maternal healthcare services utilization by women.
4. To evaluate women's satisfaction with maternity services.

5. To develop implementation strategies in order to increase maternal healthcare services utilization by pregnant women for better health care outcomes.

1.4.3 Research questions

This study aims to address the following research questions:

1. What are the factors that influence ANC, DC, and PNC services utilization by women in Awash Fentale woreda?
2. What are women's preferences in terms of maternal healthcare services?
3. What are the barriers to maternal healthcare services utilization?
4. How satisfied are women with maternity services?
5. What implementation strategy can be developed to increase maternal healthcare services utilization?

1.5 SIGNIFICANCE OF THE STUDY

Since little research has been conducted on maternal healthcare services utilization in Afar Region in general and in Awash Fentale woreda in particular, conducting a study on ANC, DC, and PNC services utilization is essential. Hence, the results of this study may indicate the most important factors that affect maternal healthcare services in the aforementioned area. Strategies developed based on the findings, if implemented, may assist in improving maternal healthcare services utilization, which in turn may reduce maternal deaths.

1.6 DEFINITION OF TERMS

1.6.1 Assessment

Assessment is the collection of pertinent data, and the analysis and interpretation of the data (FMOH2003:29). In this research study, "assessment" means determining the factors that affect maternal healthcare services utilization in Awash Fentale woreda.

1.6.2 Factors

One that actively contributes to the production of a result (*Merriam-Webster*, n.d.). In this study, “factors” refer to the determinants of maternal healthcare services utilization in the study area.

1.6.3 Maternal health

“Maternal health” refers to the health of women during pregnancy, childbirth, and the postpartum period (WHO 2016).

1.6.4 Maternal healthcare services

“Maternal health care services” refer to the services provided to women during pregnancy, childbirth, and the postpartum period (WHO 2015a:1). In this research study, “maternal health care services” mean the services that are rendered to women living in Awash Fentale woreda during pregnancy, childbirth, and the postpartum period.

1.6.5 Women

A “woman” is an adult female human (*Mosby’s Medical Dictionary* 2009:1977).In this study, the term “woman” refers to a woman who is either pregnant, child bearing, or in the postpartum period.

1.6.6 Maternity care

“Maternity care” refers to the constellation of healthcare services provided by a physician, nurse, midwife, hospital, or birthing center to a woman during pregnancy (prenatal care),delivery, and after delivery (PNC), which includes managing complications, if any (*Segen’s Medical Dictionary* 2012).

1.6.7 Preference

For research purposes, a “preference” is the expression of an act of deliberation, i.e. an attempt to weigh up, consider, and express a value for an alternative choice of action

(Bowling 2014:65).“Preference” is further described as something that is applied to an experimental situation to measure its effect (Houser 2015:136).

1.6.8 Women’s satisfaction

“Women’s satisfaction” is the care level gained that increases the likelihood of future utilization of maternal health care services (Tesfaye, Worku, Godana & Lindtjorn 2016:2).

1.7 THEORETICAL FOUNDATIONS OF THE STUDY

The conceptual framework of this study are the health-seeking behavior model developed by Anderson and Newman (1973) and the Donabedians models.

1.7.1 Anderson and Newman (1973) : This behavioral model (see Figure 1.1) proposed that the use of healthcare services is a function of the following three sets of individual characteristics:

1. **Predisposing characteristics:** Individual predisposing factors include demographic variables such as age, sex, and previous illnesses or health conditions, and socio-economic status, which is a reflection of an individual’s social standing measured by characteristics such as educational attainment and the occupation of the family head. These demographic and social status factors are linked to a third subcomponent of the predisposing factors, which include attitudinal beliefs such as attitude, value, and knowledge. Individuals who are more aware or have stronger faith in the efficacy of treatment are more inclined towards health care services utilization (Anderson & Newman 2005:12, 14-15).
2. **Enabling characteristics:** Enabling characteristics ensure the availability of health care services to individuals. These conditions can be found both on family and community levels and are measured by resources such as income, health insurance coverage, or any source of payment regardless of the individual’s regular source of care or the nature and accessibility of that source of care. Apart from family attributes, community-level characteristics such as the amount,

varieties, locations, structure, and distribution of health care facilities and personnel linked to means of transportation, and travel time to and waiting time for health care are some of the enabling characteristics that influence the use of healthcare services. The type or place of residence or rural-urban nature of the community also determines services utilization as local norms and values influence the behavior of the individual (Anderson & Newman 2005:14-16).

3. **Need characteristics:** This covers aspects such as the characteristics of illness, perceived health status, and expected benefit from treatment. According to Anderson and Newman (1973), the need factor is the most immediate cause of healthcare services utilization. The need factor reflects the perceived health status, as indicated by the severity and the morbidity conditions or the number of morbidities.

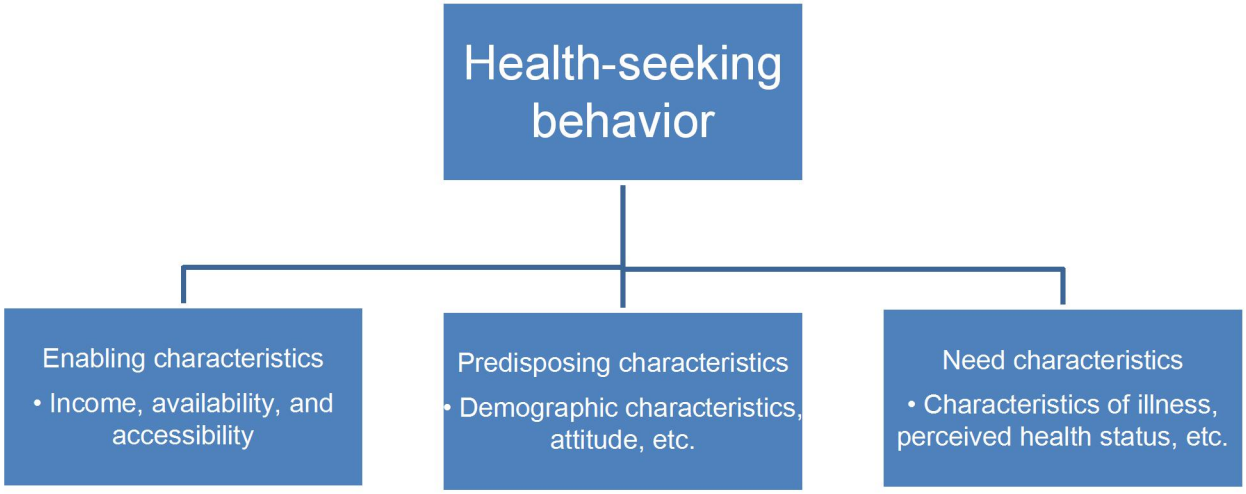

Figure 1.1: Conceptual framework for determinants of maternal health care-seeking behavior

Source: Adapted from Andersen and Newman (1973:14)

1.7.2. Donabedian Model : This model assumes the existence of three essential factors in assessing quality-structure, process and outcomes and possibly a causal

relationship between them. For Donabedian (2005), structure is defined as the places where medical care takes place and the instrumentalities of each product and may include the features of the system, the service provider or the patient. Process refers to the set of activities that take place, on the one hand, between professionals and, on the other, between professionals and patients. It includes technical and interpersonal aspects. Outcomes are the consequences for the health and well-being of individuals and society (Donabedian, 1980) and include clinical outcomes, quality of life and satisfaction with the care provided. In this study Donabedian's model was also used as the basis for steps to be followed to develop strategies.

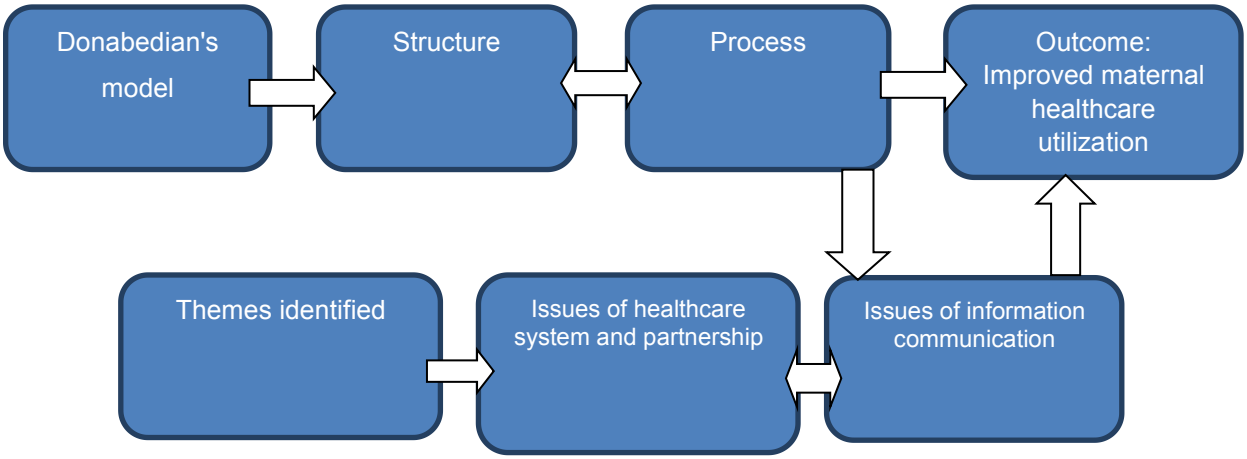

Fig.1.2 Conceptual framework for developing strategies

1.8 RESEARCH DESIGN AND METHOD

1.8.1 Research design

The research design is concerned with creating a blueprint of the activities to perform in order to satisfactorily answer the research questions identified in the exploration phase. This includes selecting a research method, operationalizing constructs of interest, and devising an appropriate sampling strategy (Bhattacherjee 2012:67). The researcher used a quantitative non-experimental research design, which deals with quantities and

relationships between attributes. It involves the collection and analysis of highly structured data in the positivist tradition. Quantitative research is appropriate in situations where there is pre-existing knowledge that permits the use of standardized data-collection methods (Bowling 2014:214).

The researcher used a quantitative, descriptive, and cross-sectional design to address the research objectives.

Descriptive research is directed at making careful observations and detailed documentation of a phenomenon of interest (Bhattacherjee 2012:7).Hence, in this research study, aspects such as the socio-demographic, socio-economic, cultural, and other characteristics that are thought to affect maternal healthcare and preferences of mothers for delivery services were investigated within the study period.

Cross-sectional research is used to simultaneously examine groups of subjects who are in various stages of development with the intent to describe differences among them. A cross-sectional study is based on the assumption that the stages that are identified in different subjects at a single point in time are representative of a process that progresses over time. In a cross-sectional study, the population of interest is carefully described (Houser 2015:258-259). In this research, women who gave birth starting from the last two years up to the time of data collection were involved. The factors that could hinder them from receiving maternal healthcare services were also explored.

1.8.2 Research method

1.8.2.1 Population

A population is the entire set of subjects who are of interest to a researcher (Houser 2015:258-259). In this study, the population consisted of all women of reproductive age in Awash Fentale woreda.

1.8.2.2 Sampling procedure

Stratified sampling was used by the researcher in order to obtain a representative sample. In stratified sampling, the sampling frame is divided into homogeneous and

non-overlapping subgroups (called “strata”) and a simple random sample is drawn within each subgroup (Bhattacherjee 2012:67). In this study, the strata were based on the ethnicity of the respondents.

1.8.2.2.**1 Sampling criteria**

Inclusion criteria : Women of reproductive age group (15-49) residing in Awash Fentale woreda who gave birth within two years duration.

Exclusion criteria:

Any women in a reproductive age group who gave birth beyond two years duration and women who didn't listen.

1.8.2.3 Data-collection methods

Data were collected using standardized structured questionnaires (see Annexure F), which were developed and included all the relevant variables in order to meet the objectives of the study.

1.8.2.4 Data analysis

The collected information were reviewed for logical consistencies and completeness before making data entries. Data were entered, analyzed, and interpreted using the Statistical Package for the Social Sciences (SPSS) software.

1.9 SCOPE OF THE STUDY

The Afar National Regional State is among the 11 geographical regions of the Ethiopian governmental structure. There are five zones in the Afar National Regional State. Owing to the financial capability of the researcher, only Awash Fentale woreda was selected from Zone 3 to conduct the research, therefore it limits the generalizability of the study findings to the Afar National Regional State.

1.10 THE STRUCTURE OF THE THESIS

This thesis is organized into chapters that are logically interlinked and in line with the research objectives and research questions. The structure of the thesis can be summarized as follows:

Chapter 1: Orientation to the Study
Chapter 2: Literature Review
Chapter 3: Research Design and Methodology
Chapter 4: Data presentation, Analysis, and Description of the Research Findings
Chapter 5: Discussion of Findings
Chapter 6: Proposed Implementation Strategies for Providing Optimal Antenatal, Delivery, and Postnatal Care Services Utilization in Awash Fentale woreda
Chapter 7: Conclusions and Recommendations

1.11 CONCLUSION

This chapter provided introductory information regarding the entire study including the overview of research methodology, conceptual frame work and structure of the thesis The next chapter presents a review of the literature relevant to the subject of the study.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

The orientation to the study was discussed in Chapter 1. A. literature review is a critical summary of research on a topic, often prepared to put a research problem in context or to summarize existing evidence (Polit & Beck 2014:384).

To write this literature review, the UNISA website was visited. For additional information and inputs for the study, the UNISA library in Addis-Ababa was also visited repeatedly to obtain recently published books. Furthermore, the UNISA library in South Africa was contacted via email and the researcher obtained sufficient literature on the subject matter. This chapter reviews the literature on factors that influence maternal health care services utilization in Awash Fentale woreda. The main topics discussed under this chapter are:

- maternal health care;
- maternal health care services;
- factors that affect maternal health care services utilization; and
- barriers to maternal health care utilization.

2.2 MATERNAL HEALTH CARE

Collins English Dictionary (2016) refers to maternal health care as “care for the health of a pregnant woman provided by a hospital or health centre”. According to the WHO (2015a:1), maternal health care services refer to the services provided to women during pregnancy, childbirth, and the postpartum period. In this research study, maternal health means the health of women during pregnancy, childbirth, and the postpartum period.

2.2.1 Overview of maternal health care

The WHO (2013a:1) stated that although motherhood is often a positive and fulfilling experience, birth for too many women, especially in developing nations, is associated with suffering, morbidity, and death.

Since all countries are expected to reduce the MMR by at least two-thirds, the average global target is supposed to be an MMR of less than 70 per 100,000 live births by the year 2030. As for national targets, no country must have a MMR greater than 140 per 100,000 live births(WHO 2015c:5).

While 80% of pregnant women of the globe access ANC by a skilled healthcare provider at least once, only 58% of them perform at least four ANC visits. In regions with the high rates of maternal mortality, such as sub-Saharan Africa and South Asia, fewer women make at least four ANC visits (49% and 42% respectively)(UNICEF 2017).

A remarkable change has been made worldwide in improving maternal health. Globally, 72% of women give birth attended by skilled healthcare providers, and the MMR has declined from 380 to 210 per 100,000 live births between 2000 and 2013 (WHO 2015a:1).

While maternal care is nearly universal, timely care for complications and educating women and decision makers regarding the importance of quality ANC early in pregnancy and PNC should be targeted and strategies to overcome barriers should be developed through awareness-raising programs (Vidler et al. 2016:64).

2.2.2 Goals of maternal health care

In 1978,the International Conference on Primary Health care indicated that the key to achieve the goal “Health for all by the year 2000” was primary healthcare (WHO 1981:14). In1994, maternal health care became the core agenda at the 1994 International Conference on Health and Development (ICPD) and it was later emphasized in Millennium Development Goal 5 (MDG5). Ethiopia has committed to achieve MDG5, which is a reduction of the MMR by 75% by the year 2015.The goal was

among the key agenda points in the country's Health Sector Development Program (HSDP) (FMOH2010b:31). Although Ethiopia was in the progress of reducing the MMR, it was not able to achieve MDG5 by 2015.

As was stated by the WHO (2015a:79),

> "women and children's health remains a central concern in the sustainable developmental goals (SDGs), as evidenced by strong commitment to ending preventable new born, child and maternal death by 2030, to ensure universal access to sexual and reproductive healthcare services".

Despite the fact that global maternal deaths have decreased by 45% since 1990, 800 women still die each day from largely preventable causes before, during, and after the time of giving birth (WHO 2015a:2). All regions of the world have experienced a decline of 37% or more in maternal mortality between 1990 and 2013. The highest reduction registered in the 23-year period was in East Asia, followed by South Asia, North Africa, South-East Asia, Oceania, sub-Saharan Africa, the Caucasus, Central Asia, West Asia, Latin America, and the Caribbean (WHO,UNICEF, UNFPA, The World Bank & The UN Population Division 2015:26).

2.2.3 Policies on maternal health care

The Ethiopian health policy has emphasized democratization and decentralization of the healthcare system; development of the preventive, promotive, and curative aspects of health care; assurance of accessibility of health care for the whole population; and the promotion of private sector and non-governmental organization (NGO) participation in the health sector (The Federal Democratic Republic of Ethiopia Growth and Transformation Plan [GTP] 2010:54). The health policy has also focused on providing health promotion and disease prevention, curative and rehabilitative services, and public health emergency preparedness and response to enable the population to be self-reliant in their health. The policy has also emphasized that special attention ought to be paid to the health care needs of women and children by assuring adequate maternal health care and referral facilities for high-risk pregnancies.

The HSDP aims at ensuring community ownership and empowerment by adopting effective social mobilization, sustained awareness creation, creating a conducive environment, and supporting community organizations.

“The health extension program has served as a primary vehicle for prevention, health promotion, behavioral change communication and basic curative care through effective implementation of the 16 packages” (The Federal Democratic Republic of Ethiopia GTP2010:55).

“Assurance of healthcare for all segments of the population was one of the top priorities in the Ethiopian Health Policy and it stated that special attention should be given to the health needs of women and children” (Health Policy of the Transitional Government of Ethiopia 1993).

Maternal and child health (MCH) was also one of the top priority programs of the Fourth Ethiopian Health Sector Development Program (HSDP IV). Over the last four years Ethiopia has been implementing various programs to achieve the targets set in HSDP IV, and MDGs 4 and 5. The Ministry of Health has applied a number of approaches to improve maternal mortality and morbidity in the country. The MMR in Ethiopia was estimated at 420 per 100,000 live births in 2013. Since 1990, there has been a 5.1% reduction per annum in the MMR. However, Ethiopia still contributes to more than 4% of the global maternal deaths, with an estimated 13,000 deaths in 2013.Ethiopia has also shown a marked improvement in ANC coverage, and SBA and PNC coverage, all of which directly contribute to significantly improving the maternal health conditions in the country (FMOH 2010b).

Based on UN estimates, Ethiopia has reduced the MMR by 69% from the 1990 estimate, with an annual reduction rate of 5% or more (FMOH 2015:23). According to the latest UN estimates, the proportion of mothers dying per 100,000 live births has declined from 1,400 in 1990 to 420 in 2013 (WHO et al. 2015:25). However, the EDHS of 2005 and 2011 reported an MMR of 673 and 676 per 100,000 live births respectively, indicating almost no change between the two surveys. A significant variation in estimating

maternal mortality is observed in different studies, which calls for more robust and locally generated information (FMOH 2015:24).

A research study conducted in rural Ethiopia showed regional discrepancy with respect to maternal health care utilization. Compared to the reference region (Dire Dawa), the utilization of ANC, DC, and PNC services by women was lower in the Oromia, Somali, and Southern Nations, Nationalities, and Peoples' (SNNP) Regions. Women in Tigray used ANC services more than those in Dire Dawa. In addition, women who lived in the Tigray, Afar, and Benishangul-Gumuz Regions (for DC only) and Amhara (for both DC and PNC services) used less of these services than women in Dire Dawa (Mehari & Wencheko 2013:23). Similar studies conducted in northwest Ethiopia revealed that the utilization of SBA is still very low, with a high number of deliveries being attended by unqualified persons at home. There are also still women who deliver by themselves (Alemayehu & Mekonnen 2015:6).

2.3 Maternal healthcare services

The *Oxford Dictionary* (2016:690) defines maternal health care service as the public service providing medical care. In this research study, maternal health care services refer to all public services providing ANC, DC, and PNC in Awash Fentale woreda.

It is a fact that those women who give birth without medical assistance are more likely to be exposed to an increased risk of complications or death. Ninety-nine percent of these deaths occur in developing countries and the majority of these deaths are preventable with appropriate care (Doctors Without Borders [MSF] 2015:1). The UN under SDG 5 indicated that ensuring universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences has become essential (UN 2015:18).

Most maternal deaths are preventable. Access to health care during pregnancy and childbirth is essential to allow for appropriately timed interventions to be taken if complications arise (MSF 2015:1).

The low utilization of maternal health care services exposes women to high risks that lead to unfavorable consequences and increases the likelihood of maternal morbidity, mortality, and disability (El Shiekh & Vander, Kwaak 2015:8). Wealth and parental educational attainment, which measure socio-economic status, are the main predictors of differences in the utilization of MCH services and health outcomes in children under five years of age. The contribution of primary healthcare facilities as a point of care for place of delivery rose from 32% in 2005 to 47% in 2011 respectively (Memirie, Verguet, Norheim, Levin & Johansson 2016:5).

Hemorrhage, hypertension in pregnancy, abortion, and sepsis are the leading causes of maternal deaths in Ethiopia, which can only be averted through skilled institutional maternal healthcare (FMOH2015:24).

2.3.1 Antenatal care (ANC) services

ANC is defined as "the routine health control of presumed healthy pregnant women without symptoms (screening), in order to diagnose diseases or complicating obstetric conditions without symptoms, and to provide information about lifestyle, pregnancy and delivery" (Pay, Backe, Klovning & Sand 2014:1). The focused ANC model of Ethiopia has two categories: basic component care for pregnant women eligible to receive routine ANC, and specialized care for those pregnant women needing specialized care based on risk factors. The recommended medical services rendered in all or some of the four visits as indicated by the FMOH (2010a:13) include the following:

- **History:** Socio-demographic background and medical and obstetric histories.
- **Physical examination:** Vital signs, height and weight measurements, uterine height, etc.
- **Laboratory tests:** Urine analysis, syphilitic test, blood group test, hemoglobin test, HIV test, etc.

- **Care provision:** Iron supplementation, tetanus toxoid injection, insecticide-treated nets for malaria, etc.
- **Counseling:** On danger signs of pregnancy, birth plan, breast feeding, benefits of HIV tests, etc.

2.3.1.1 Importance of ANC services

ANC is an ideal platform for family planning, health education, and counseling because ANC clients interact with health care providers on a regular basis throughout pregnancy and can prepare to initiate family planning methods after birth (United States Agency for International Development [USAID] 2018:1).

2.3.1.2 Women's ANC visits during the antenatal period

If ANC is received early in pregnancy and continued throughout to delivery, adverse pregnancy outcomes can be reduced significantly or avoided completely. Good ANC can link the woman and her family with the formal health system and it can also increase the chance of using a skilled attendant at birth and eventually contribute to good health through the life cycle. However, inadequate care during this time breaks the link in the continuum of care and affects both women and their babies (Lincetto, Anoh, Gomez & Munjanja 2016:2).The WHO (2015a) recommends that a pregnant woman without complications is expected to start receiving ANC in the first trimester of pregnancy and should have at least four antenatal visits; the first of which should take place during the first trimester (CSA 2014:43). However, a significant proportion of women from developing countries do not start ANC according to the recommendation.

Although the percentage of Kenyan women who made at least one ANC visit during their last pregnancy in a medical facility was 88.9%, those who made at least four ANC visits, as recommended by the WHO, were only 38.9% (Nzioki, Onyango & Ombaka 2017:24).

The utilization of ANC services is also higher among women who have given birth to less than three children (98.2%) and lower among those with six or more children

(95.1%). Hence, parity is significant with the use of ANC services, with $\chi 2 = 20.2$ and $p < 0.001$ (Tsawe et al. 2015:4).

According to the Ethiopian *Management Protocol on Selected Obstetrics*(FMOH 2010a), pregnant women are recommended to attend four ANC visits during pregnancy. An ANC visit is recommended to be made during the first trimester around or before 16 weeks of the gestational age, as compared to the WHO's (2016) recommendation for the first visit to occur at or before 12 weeks of the gestational age. The protocol further suggests two visits in the third trimester (FMOH 2010a:8). A study conducted by the CSA showed that about four in every ten (41%) Ethiopian women did not receive any ANC for their last birth. This represents a marked decline from 15 years ago, when almost three in four (73%) pregnant women did not receive any ANC (CSA 2014:42).

A study conducted in Arbaminch (Ethiopia) revealed that 82.6% of the pregnant women initiated ANC at or after four months of gestation, which is higher than the results found in Addis Ababa (Ethiopia), Bahir-Dar (Ethiopia), Gonder (Ethiopia), and Nigeria (Gebremeskel, Dibaba & Admassu 2015:4).

2.3.1.3 Awareness of danger signs

Raising awareness among women of the danger signs of pregnancy, childbirth, and the postpartum period is important for safe motherhood. The WHO (2009:2) recommended appropriate research-based interventions that promote the early detection of complications and the initiation of early and appropriate treatments of severe pregnancy complications, including anemia, severe pre-eclampsia, eclampsia, bleeding, infections, abortion, and other medical complications. In Ethiopia, a country where maternal morbidity and mortality are high, little is known about the knowledge levels of pregnant women regarding obstetric danger signs (Hailu, Gebremariam & Alemseged 2010:1).A study conducted in Addis -Ababa indicated that vaginal bleeding was identified by the majority (62.8%) of respondents, followed by severe headaches (21.7%) and swelling of the hands and face (22.3%) (Tebekaw et al. 2015:81). A similar study conducted in Tigray showed that two-thirds (66.3%) of women had knowledge of danger signs that could occur during pregnancy/labor (Aregay et al. 2014:120).

2.3.1.4 ANC interventions

Relevant information, education, and advice regarding appropriate nutrition and rest; promotion of early and exclusive breast feeding, and feeding options for HIV-positive women; smoking cessation; tetanus toxoid vaccination; and avoidance of alcohol and drugs are some of the important interventions during pregnancy (Lincetto et al. 2016:57-58).

Tetanus toxoid injections are given during pregnancy to prevent neonatal tetanus, which is a major cause of early infant death in many developing countries. In Ethiopia it has been reported that 49% of women received sufficient doses of tetanus toxoid to protect their last-born baby against neonatal tetanus (EDHS 2016:23).

2.3.2 Delivery care (DC) services

2.3.2.1 Mode of delivery

It has been found that previous experience of delivery influences the knowledge of women regarding health centers, mode of delivery, and childbearing. Understanding women's perceptions of modes of delivery in various cultures can strengthen promoting programs and policies in support of vaginal delivery (Zakerihamidi, Roudsarii & Merghati 2015:1).

A study conducted in India indicated that the majority (69%) of women preferred the vaginal mode of delivery because they believed that it enhances the affectionate relationship between mother and baby (Varghese,Singh, Kour & Dhar 2016:4).The attitude of the majority of women showed that vaginal delivery is the natural mode of birth (89%), and that health recovery is fast (80%) and involves less risk (67%)(Varghese et al. 2016:2). It was noted that vaginal birth after one caesarean section was also a safe practice, provided that it is offered with proper selection of candidates with factors having a high success rate. Physicians ought to be knowledgeable of factors that have good outcomes before counseling mothers so that failure rates decrease (Birara & Gebrehiwot 2013:6).

Another mode of delivery that can only be recommended when the life of the mother or fetus is at risk is cesarean section (Zakerihamidi et al. 2015:1).

A study conducted in Ethiopia revealed that 2% of births were delivered by caesarean section. All these caesarian sections were performed in a health facility. Caesarian sections were most likely to take place in urban areas, among highly educated women, and in the wealthiest quintiles (CSA 2014:50).Research on the attitude towards cesarean sections has also showed that this mode of delivery is associated with more complications (72%)(Varghese et al. 2016:2).

2.3.2.2 Preference for places to give birth

Women's choices for various birth options, particularly for hospital versus non-hospital settings, are influenced by their pre-existing values, beliefs, and experiences (Coxon, Chisholm, Malouf, Rowe & Hollowell 2017:14).

A study indicated that women who preferred home birth found a comfortable environment, trust in the natural birth process, and privacy as the most important factors. "Women opting for a hospital birth – midwifery-led or obstetric-led – found safety, assistance during childbirth and pain relief most important" (Beltman 2016:3).

Efforts exerted to reduce health risks to mothers and children are thought to increase the proportion of babies that are delivered in health facilities. Studies conducted by the CSA have shown that 16% of births are delivered at a health facility, 15% in a public facility, and 1% in a private facility. The percentage of births delivered in a health facility ranges from 10% in Afar to 87% in Addis Ababa (CSA 2014:47).

It is evident that the community prefers home delivery due to lack of knowledge and awareness of service delivery points, fear of the increased chance of having a caesarean delivery at hospital, and lack of female doctors in the healthcare facilities (Sarker et al. 2016:2).

On the other hand, pregnant women between 15and19 years of age are approximately five times more likely to deliver in healthcare facilities compared to women between

35and 39 years of age, and pregnant women who have attended college are 12 times more likely to deliver in a healthcare facility compared to those who have no formal education (Bayu, Adefris, Aman & Abuhay 2015:4).

It has been found that women who obtain health information regarding the benefits of institutional deliveries have a 3.6 times higher increased probability of choosing a health institution than those who did not obtain the information (Awash Fentale Woreda Health Office 2015:1).

A study conducted in Addis-Ababa indicated that more than three-quarters of women living in slums gave birth at public healthcare facilities compared to slightly more than half of the non-slum residents. A higher percentage of the non-slum residents (41.7%) gave birth at private facilities compared to only 15.3% of the slum residents (Tebekaw et al. 2015:3).

2.3.3 Postnatal care (PNC) services

PNC is “the care given to the mother and her newborn baby immediately after the birth and for the first six weeks of life”(The Open University 2018:1).

It is stated that knowledge of PNC has become a prerequisite for obtaining access to and using PNC services timely and effectively (Aregay et al. 2014:8). The postnatal period is a critical period in the lives of mothers and newborn babies. Major changes occur during this period that determine the health of mothers and newborns. Since this is the most neglected time for the provision of quality services, lack of proper care during this period could result in significant ill health and even death (WHO 2013b:6).

Most maternal and neonatal deaths occur during the first 48 hours after delivery. Hence, prompt PNC for both the mother and the child is important to treat any complications occurring from the delivery, as well as to provide the mother with important information on how to care for herself and her child (CSA 2016:23).

Research studies have indicated that for home deliveries, the first postnatal contact should be as early as possible, preferably within 24 hours of birth, and, when the need arises, extra contact for home births at 24 to 48 hours is desirable (WHO 2013b:1).

In order to reduce the main causes of death during the postpartum period, it is advisable that interventions should be aligned with the WHO guidelines, which include “treatment of maternal anemia, detection and management of postpartum sepsis (serious infections after birth), initiation of early breastfeeding (within the first hour), exclusive breastfeeding for six months, hygienic cord and skin care” (Belemsaga et al. 2015:93).

A study conducted by the EDHS (2016:34) indicated that the PNC coverage in Ethiopia in 2016 was estimated at 24%. The percentage of women who had a postnatal checkup in the first two days was the highest for Addis-Ababa and the lowest for the Oromia Region (EDHS 2016:34).

2.3.4 Health care providers for maternal health

2.3.4.1 Skilled birth attendants (SBAs)

An SBA is defined as an accredited health professional, including a midwife, doctor, or nurse, who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth, and the immediate postnatal period, and in the identification, management, and referral of complications in women and newborns (WHO 2004:1).

Delivery provided by skilled health providers has been found to be the most important proven intervention to reduce maternal mortality. The majority of births delivered in health facilities are attended to by skilled healthcare providers compared with births delivered elsewhere (CSA 2014:48-50).

Studies by the WHO indicate that coverage of skilled attendants during childbirth increased from 62% in 2000 to 73% in 2013. However, although such improvements have been registered globally and within regions, millions of births were not assisted by a midwife, a doctor, or a trained nurse. The studies have also emphasized that more

than 40% of births in the WHO African region and WHO South-East Asia region were not attended to by a skilled health provider (WHO 2015a:83).

A study conducted in Kenya indicated that the woman's level of education, partner's level of education, employment status, number of births (as at the time of the study), ANC attendance, and distance to the nearest healthcare facility were associated with skilled delivery, using chi-square tests (Gitimu et al. 2015:5).

Several studies have shown that the utilization of SBAs is still very low in Ethiopia, with a high number of deliveries being attended to by unqualified persons at home. There are still women who deliver by themselves. A study in northwest Ethiopia revealed that women's higher education, urban residence type, higher frequency of ANC visits, proximity of living to a healthcare center, and encountering complications during labor were found to be positively correlated with SBA utilization (Alemayehu & Mekonnen 2015:6).

The massive introduction and escalated number of health extension workers in Ethiopia enabled higher services utilization in the Bench Maji Zone, south west Ethiopia, in which more than 38,000 health extension workers have been trained and deployed in agrarian, pastoral, and urban areas in more than 16,000 kebeles (neighbor hoods), which improves the utilization of healthcare services by linking community and healthcare facilities, particularly healthcare centers (Tadele& Lamaro 2017:6).

Research has shown that traditional birth attendants (TBAs) can play a vital role in improving maternal health if they work in harmony with midwives. For instance, a study conducted in Indonesia indicated that TBAs are offered financial incentives to refer pregnant women to midwives (Shetty 2014:805).

It is obvious that the choice of service provider could potentially facilitate or hinder the equitable use of healthcare services. The routine evaluation of the mix of public/private/NGO providers may be essential in making healthcare accessible to all. Equity in the use of maternal healthcare services could be improved by offering a more balanced choice of service providers, rather than relying primarily on any one sector for the provision of health care services (Kamal, Curtis, Hasan & Jamil 2016:9).

Health professionals' contribution to awareness creation and increased services utilization has also been acknowledged (Tadele & Lamaro 2017:9).

The acceleration of access to primary healthcare in Ethiopia has not only resulted in a significant increase in the number of healthcare centers, but also in a remarkable increment in trained and deployed mid-level health professionals at health care centers (Medhanyie et al. 2015:1).

The EDHS (2016) indicated that the percentage of women who use a skilled provider for ANC services increases greatly with women's education. Similarly, 80% of births to urban women were assisted by a skilled provider and 79% were delivered in a healthcare facility, as compared with 21% and 20% respectively of births to rural women. As indicated by the EDHS (2016:24), the Afar Region has the lowest percentage of women whose births were delivered by a skilled provider or delivered in a health care facility (16% and 15% respectively), while Addis Ababa has the highest percentages for both indicators (97%).

A study conducted in Debre- Markos, northwest Ethiopia, found that 66.5% of women did not utilize PNC services. The most common reason was healthcare worker-related problems, followed by lack of knowledge (Limenih, Endale & Dachew 2016:6).

2.3.5 Women and maternal health care services

2.3.5.1 Women's decision making

Women's decision making regarding healthcare seeking for maternal health problems falls under the domain of women, but they might be influenced either by their husbands or religious leaders (El Shiekh & Vander Kwaak 2015:7). A study conducted in Debre Markos suggested that nearly 74% of women can make decisions regarding health care seeking by themselves, while the rest need to get the decision either from their husband or their relatives (Bayu et al. 2015:4). A similar study conducted in Dodota, Oromia Region, Ethiopia, indicated that approximately 48% of the decisions regarding women's healthcare seeking were made by their husband or others. Only 9.5% of women decided by themselves regarding healthcare seeking (Fikre & Demissie 2012:4).

2.3.5.2 Women's healthcare-seeking behavior

Healthcare-seeking behavior has been defined as a

> "sequence of remedial actions that individuals undertake to rectify perceived ill-health. In particular the health-seeking behavior can be described with data collected from information such as the time difference between the onset of an illness and getting in contact with a healthcare professional, type of healthcare provider patients sought help from, how compliant the patient is with the recommended treatment, reasons for choice of healthcare professional and reasons for not seeking help from healthcare professionals" (Bhuiya 2009:69-70).

The choice of care is basically dependent on the way the illness is perceived. For example, illnesses that are considered normal or less severe to women rarely provoke a trip to any healer. A study conducted in Malawi revealed that illnesses like headaches, blurred vision, and swollen legs are normal in pregnancy and indeed very few of these cases are taken to a practitioner (Zamawe 2013:23).

Women delay healthcare seeking due to financial constraints as many women depend mainly on their husbands to supply funds for healthcare services (Akeju et al. 2016:6).

Although there are more, the following four factors contribute to shaping the healthcare-seeking behavior of women (Akhter 2015:269):

1. Apprehension regarding childbirth and healthcare;
2. Social and cultural distance from healthcare providers;
3. Perception of pregnancy and childbirth as social events or medical events; and
4. Choice of, and control over, the process of childbirth.

A study conducted in Egypt identified socio-cultural resourcefulness as capturing the socio-cultural capital of women who display maternal health-seeking behavior, as well as additional characteristics of the household (Benova, Campbell, Sholkamy & Ploubidis 2014:11). On the other hand, failure to consider social and cultural factors' impact on healthcare decision making may also explain poor utilization of existing services (Chomat, Solomons, Montenegro, Crowley & Bermudez 2014:117).

The observable facts of a study conducted in Ghana showed that the various characteristics of the maternal health system are considered as determining factors for women's behavior and decision to seek care, as well as the choice and use of maternal healthcare services. These characteristics include the location of the health facility, order of referrals, the capacity of the health facility, and the financing of maternal healthcare through the delivery exemption policy (Aboagye & Agyemang 2013:72).

A study conducted in the rural Haramaya District, eastern Ethiopia, indicated that knowledge of pregnancy complications, educational status, and the religion of women were found to be significantly associated with ANC, DC, and PNC services-seeking behaviors (Kifle, Azale, Gelaw & Melsew 2017:10).

2.3.5.3 Women's satisfaction with maternal healthcare services

A study conducted in southwest Ethiopia suggested that client satisfaction plays a significant role in increasing maternal health care utilization for institution-based delivery and it is also necessary to improve health care quality in reducing maternal morbidity and mortality (Tesfaye et al. 2016:6).

Since there is a need for more research on maternal satisfaction in developing countries, where safe deliveries remain a major problem and barriers to utilization of institutional deliveries pose a major challenge for healthcare programs, further research on maternal satisfaction could be made more policy relevant by identifying the relative strength of various determinants that influence maternal satisfaction; this will help in prioritizing appropriate corrective interventions for improved quality of care (Srivastava, Avan, Rajbangshi & Bhattacharyya 2015:10).

According to Atiya (2016:26),

> "[t]he main factors identified as influencing satisfaction and dissatisfaction were caregivers and client interaction, the characteristics of the setting, the involvement of clients in the caring process, the nurses' perception of client characteristics, the outcome of labor for both mother and baby, the acceptability of alternative places for delivery, and the respondents' expectations and

perceptions of hospital delivery. Of all these factors, however, caregiver attitude was seen as the strongest factor in determining maternal satisfaction with care".

The findings of a study from Sarawak, Malaysia, suggested that health education and public health program interventions should be more focused on local factors such as community-oriented and culturally suited language-specific approaches, and not a one-size-fits-all approach for maternal health-related programs to improve maternal satisfaction with ANC (Rahman, Ngadan & Arif 2016:5).

A study conducted in Debre Markos indicated that having a plan to deliver at a health institution and laboring time of less than six hours were significantly and positively associated with maternal satisfaction with delivery services. The study has also showed that maternal satisfaction with delivery services was lower among women who experienced spontaneous vaginal delivery as compared to those women who experienced a cesarean section (Bitew, Ayichiluhm & Yimam 2015).

A similar study in Gamo Gofa Zone, south west Ethiopia, showed that a proportion of the women attending health centers were more satisfied compared to women attending hospitals (94% and 58% respectively). The reason for this higher satisfaction was thought to be the proximity of the healthcare facility to the women seeking maternal healthcare services (Tesfaye et al. 2016:6).

Research conducted in Assela Hospital, Ethiopia, showed that women who had ANC follow-ups had twofold increased odds of maternal satisfaction compared to those who had no ANC follow-ups. With regard to the respondents' age, women of the ages 20 to 34 were more likely satisfied compared to those aged 35 to 49 years. The educational status of the respondents was also a significant predictor of maternal satisfaction. Respondents who had no higher education were more satisfied than those who had a diploma and above. Maternal satisfaction is also affected by monthly income; women whose monthly income was less than 500 Ethiopian birr (ETB) and 500 to 1,000 ETB were twice as satisfied than those with income greater than 1,000 ETB (Amdemichael,Tafa & Fekadu 2014:5).

2.4 FACTORS THAT AFFECT MATERNAL HEALTHCARE SERVICES UTILIZATION

Although the use of maternal healthcare is essential for further improvement of MCH, little is known about factors that influence the use of these services in Ethiopia in general and in Awash Fentale woreda in particular.

Various socio-demographic factors influence and cause a difference in the utilization of maternal healthcare services (Tsawe et al. 2015:2). The following factors have been widely documented in the literature and are known to affect the use of maternal healthcare services across the world.

2.4.1 Demographic factors

2.4.1.1 Maternal age

A study conducted in Kenya revealed that the probability of an expectant woman to deliver in a medical facility reduced with the increase of her age. The possibility of an expectant women aged 26 years and above to deliver using SBA reduces by 69% compared to women aged 25 years and below (odds ratio [OR]=0.310) (95% confidence interval [CI]=0.155-0.623) (Nzioki et al. 2017:24).

A similar study conducted in Swaziland showed that nine out of ten women (97.3%) in their respective reproductive ages went for ANC visits, particularly those aged 35 to 39 with the proportions of 98.8% (Tsawe et al. 2015:4).

A study from Kenya showed, however, that the probability of an expectant woman aged 31 years and above to seek ANC services for at least four times reduced by 88% compared to expectant women aged 30 years and below (Nzioki et al. 2017:4). A study conducted in rural Ethiopia also revealed that utilization of ANC, DC, and PNC services was found to be lower for older mothers than young mothers and adolescent mothers (Mehari & Wencheko 2013:18-19).

On the contrary, early marriage is a maternal health concern because it is linked with adolescent/teen pregnancy. Teen pregnancy is known as a leading cause of death in

adolescents because of delivery and birth complications (El Shiekh & Van der Kwaak2015:5).

2.4.1.2 Parity

Research conducted in rural Ethiopia showed that birth order(s) had significant associations with the use of ANC, DC, and PNC services. Research indicated that maternal healthcare services utilization decreases with increasing birth order (Mehari & Wencheko 2013:23).

ANC services utilization was also higher among women who have given birth to less than three children (98.2%) and lower among those with six or more children (95.1%). Hence, parity is significantly associated with the use of ANC services (Tsawe et al. 2015:4).

A study conducted in rural Kenya showed that women with three children or more delivered assisted by an SBA reduced by 68% compared to these with two children or less (OR=0.319) (95% CI=0.154-0.660). The probability of delivery assisted by an SBA reduced much further (by 74%) for women with four children or more compared to these with three children or less (OR=0.260)(95% CI=0.129-0.527) (Nzioki et al. 2017:25).

Moreover, a study conducted in Swaziland indicated that the utilization of PNC services was high among women who have had less than six children. The rate of PNC services utilization is low among women who have had six or more children(16.8%) (El Shiekh & Vander Kwaak 2015:10).

2.4.1.3 Women's educational status

Several studies have indicated that education enhances the autonomy of women to develop greater confidence and capabilities in making decisions about their own health. It is also stated that women's level of education is directly related to better utilization of healthcare services (El Shiekh & Vander Kwaak 2015:6).

A study conducted in Tigray, Ethiopia, revealed that illiterate women were less likely to utilize ANC services compared to those who had completed primary and secondary

school and above (Aregay et al. 2014:121).Nearly 43% of women with primary or higher education used ANC services, while 23.3% of women with no education used ANC services (Mehari & Wencheko 2013:18). The rate of ANC services utilization is also higher in Swaziland among women with secondary education (98.6%), followed by those with a higher education (97.2%) (Tsawe et al. 2015:5).

As is indicated by many research studies, women's education is a strong predictor of place of delivery. Women with no education are less likely to deliver in healthcare institutions than literates (Fikre & Demissie 2012:5; Ayele, Belayihun, Teji &Ayana 2014:6). Women who have a higher level of education (tertiary/university) are also more likely to use an SBA during delivery. Those with a secondary level of education were four times more likely to use an SBA, while those with only a primary education were three times more likely to use an SBA during delivery compared with those with no education at all (Gitimu et al. 2015:6). A similar study conducted in Kenya revealed that women with a secondary school level of education and above were six times more likely to deliver in a medical facility assisted by an SBA compared to those with a primary level of education and below (Nzioki et al. 2017:25).

With regard to DC and PNC services, 96.0% of women with a higher education prefer institutional deliveries, followed by 83.4% of those with a secondary education, while 27.8% of women with a secondary education and 25.0% with higher education revealed that they used PNC services (El Shiekh & Van der Kwaak 2015:5,7). Moreover, women with a secondary level of education and above were six times more likely to seek postpartum care than those with a primary level of education and below (Nzioki et al. 2017:25).

2.4.1.4 Husbands' educational status

The partner's education level is also significant in influencing maternal healthcare services utilization. If a woman's partner had a higher education level, she was three times more likely to use an SBA. A woman whose partner had a secondary education was 2.9 times more likely to influence the outcome variable, while one whose partner

had studied up to primary school had lower odds of utilizing an SBA compared with a partner with no education (Gitimu et al. 2015:6).

Similarly, women whose husbands completed secondary school or above were more likely to deliver at a healthcare facility than women whose husbands had never received any formal education (Aregayet al. 2014:123). On the other hand, women whose husbands were illiterate were less likely to choose a healthcare facility as a delivery place when compared to women whose husbands received secondary education and above (Weldearegay 2015:5).

2.4.1.5 Wealth

As highlighted in a study conducted in Afghanistan, wealth is strongly associated with the utilization of SBAs. It was stated that women from rich families were 2.7 times more likely to utilize an SBA than those from poor families (Shahram et al.2015:604). A study conducted in Tigray highlighted that women who have their own monthly income were twice as likely to utilize DC services than women who had no own monthly income (Aregay et al. 2014:121). Maternal wealth is also associated with ANC services utilization. A study in Swaziland revealed that women from the rich quintile tend to use ANC services more compared to those from the poor quintile (Tsawe et al. 2015:4).

A similar study conducted in rural Kenya indicated that expectant women in households earning more than US$1 a day were four times more likely to make the recommended four ANC visits compared to those earning US$1 and below (Nzioki et al. 2017:24).Wealth was also found to be a significant factor associated with SBA-assisted deliveries (Shahramet al. 2015:602). Moreover, women in the rich quintile use PNC services more compared to those in the middle wealth quintile (Tsawe et al. 2015:7).

2.4.1.6 Occupation

It has been found that maternal employment has a strong association with increased utilization of maternal healthcare services (Mehari & Wencheko 2013:22). It was stated that women who were involved in other occupations than in farming were more likely to

attend three or more ANC visits and were likely to start ANC in the early stages of pregnancy. Women with non-farming occupations also received maternal care from SBAs and were likely to give birth in a healthcare facility (Situ 2013:48).

A study conducted in Kenya revealed that women who were employed and women who had small businesses were 3.7 times more likely to seek ANC services as recommended compared to farm workers (Nzioki et al. 2017:24).

A similar study conducted in Kenya demonstrated that women who were employed were more likely to use skilled delivery compared to those who were unemployed (Gitimu et al. 2015:5). It has been found that a higher proportion of Nigerian women in formal employment delivered in a healthcare facility compared with the unemployed (Ononokpono & Odimegwu 2014:7). Research in the East Hararghe Zone, Ethiopia, showed that the occupation of women and their husbands were found to be significant predictors of institutional delivery (Ayele et al. 2014:5).

2.4.1.7 Media exposure

Exposure to media is among the various socio-demographic factors that influence and cause a difference in the utilization of maternal healthcare services (Tsawe et al. 2015:2). Previous research provides a clear indication that exposure to mass media (newspaper, radio, and television) play a main role in informing women of maternal healthcare services (Tsawe et al. 2015:9;Shahram et al. 2015:602). A study conducted in Afghanistan indicated that women who had access to only television and those with access to both television and radio undertook more ANC visits compared to those women who were not exposed to these media (Shahram et al. 2015:604). The research also revealed that media exposure was strongly associated with SBA utilization. A similar study from Swaziland revealed that women who watched television at least once a week were over four times more likely to use delivery services than those who did not watch television at all (Tsawe et al. 2015:8).

Research conducted in Ahferom woreda, Tigray Region, Ethiopia, also showed that the probability of choosing healthcare institutions increased by 3.6 times among women

who received health information about the benefits of institutional deliveries compared to those who did not receive the information (Weldearegay 2015:5).

2.5 BARRIERS TO MATERNAL HEALTHCARE SERVICES UTILIZATION

2.5.1 Lack of healthcare facilities

A study conducted in rural India revealed that a considerable number of healthcare centers are still understaffed and inadequately equipped, and found that essential obstetric drugs, blood pressure instruments, labor/examination tables, bed screens, and basic amenities such as water, electricity, toilets, etc. are some important barriers that affect the utilization of healthcare services (Singh 2016:18).

2.5.2 Unemployment

Research conducted in eastern Nepal revealed that unemployment was considered an important barrier that resulted in lack of money, which in turn caused the decision to be taken late and the time taken to accumulate the assets delayed care due to social obligations and household challenges (Lam & Krishna 2014:256).

Research findings in Nigeria also indicated that child survival was significantly higher among the children of mothers who reported no barriers to accessing healthcare services. Cultural and resource-related factors stood out as key barriers to healthcare utilization (Adedini, Odimegwu, Bamiwuye, Fadeyibi & De Wet 2014:6).

As indicated by several studies, factors related to healthcare facilities include lack of good medication and skilled health workers. Poor attitude and unprofessional conduct of health workers made up over a quarter of the reasons why pregnant women did not utilize ANC services (Adedini et al. 2014:9;USAID 2012:5).

2.5.3 Cultural factors

Socio-cultural factors, including disadvantaged ethnicity, lack of knowledge of services, and exposure to information, lower women's autonomy, and belief in traditional healers was also identified as a barrier to ANC services utilization in the Sunsari District of

eastern Nepal. Lower wealth rank was also identified as a strong barrier to ANC services utilization (Deo et al.2015:5).

Research has also indicated that cultural beliefs regarding maternal health and illness can prevent women from utilizing modern maternal healthcare services. Believing that illness is a punishment from God or that the outcome of pregnancy is predetermined by God/Allah can discourage women from seeking care to prevent pregnancy complications or treat complications once they occur. For a Muslim woman, believing that no man other than her husband should touch her body might keep her from seeking maternal healthcare if the facility's provider is male. In both Muslim and Christian communities, there is a belief that a mother can be exposed to the "evil eye" if she leaves the house within ten days after childbirth (USAID 2012:5).

2.5.4 Distance from health facilities

Despite efforts to bring skilled services closer to the community, physical distance due to the lack of road networks with limited transport facilities remains a major problem in rural Pakistan. Lack of accessibility due to these factors results in limited interaction and communication between the community and healthcare providers, which leads to further underutilization of maternal healthcare services (Sarfraz, Tariq, Hamid & Iqbal 2015: 848).

Postnatal confinement is commonly practiced in most of the villages in Nepal. Confinement is about keeping a mother and baby at home for a certain number of days or weeks. The tradition arose from the need to protect the newborn baby and the mother from infection and to help the mother recover from the exhaustion of childbirth (Lama & Aki 2014:256).

2.5.5 Absence of the husband in the home

A study conducted in Adwa, Ethiopia, showed that key barriers for women to not undertake ANC visits and institutional delivery were the absence of husbands for many months in the year, distance, and lack of transportation due to geographical factors.

“The cultural tradition of ‘zwar’ [evil spirit] was also perceived as a barrier for some women to attend ANC services. Disrespect and mistreatment by health workers and health facilities were also additional barriers for women, among other challenges” (Jackson,Tesfay, Godefay & Gebrehiwot 2016:12).

2.6 APPROACHES TO MATERNAL HEALTHCARE

An improvement in accessing and utilization of quality maternal and newborn healthcare services for vulnerable populations is demonstrated by innovative strategies and solutions that address healthcare system bottlenecks and has been indicated by case studies in various countries.“Evidence-based strategies, government ownership and political will, comprehensive and integrated equity-based approaches, and supportive partnerships are shown to be effective and [to] accelerate progress towards achieving the reduction of maternal and child mortalities”(UNICEF 2013:67).

Moreover, countries can learn from one another’s approaches, methods, and interventions, and may replicate and adapt them to their particular contexts. Collaboration among countries and regions must continue to be promoted and facilitated to enhance progress, save the lives of millions of women and newborns, and improve the wellbeing of their families.

Innovative approaches in maternal and newborn healthcare will also require innovative strategies for their evaluation. Such innovative strategies include:

- integrating maternity waiting homes as part of the health system;
- maternal and prenatal death review to improve the quality of service;
- communication for behavioral impact (COMBI) approach to ANC;
- a nationwide upgrade of healthcare facilities into birthing centers to address inequities in access to delivery services among the most deprived women;
- essential intra-partum and newborn care protocol;
- introduction of magnesium sulfate to manage pre-eclampsia; and
- involving communities in addressing maternal health inequalities (Lunze et al. 2015:15).

These strategies allow program and policy makers to identify the potential of interventions and ultimately determine which approaches may work, and why (Lunze et al.2015:15).

Community-based integrated primary healthcare interventions have been proven as effective and efficient ways to reduce maternal deaths and improve the utilization of maternal healthcare services in Ethiopia. The Government of Ethiopia has adopted an approach called the Health Extension Program (HEP) to provide services in pastoral areas (El Shiekh & Vander Kwaak 2015:5).

2.7 CONCLUSION

This chapter presented a detailed literature review on the research topic. The literature review enhanced the development of a feasible research problem for the research proposal and the research methodology. It enabled the researcher to have a better understanding of the study topic. It also enabled the researcher to link the research findings with existing knowledge. The next chapter presents the methodology relevant to the subject of the study.

CHAPTER 3
RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The literature review was presented in Chapter 2. In this chapter, the research design and methods that would be appropriate to answer the research objectives and questions are discussed. The research method discussion includes the research population, sampling and sampling technique, and data-collection and data-analysis methods. The validity and reliability of the instrument and ethical issues are also described.

3.2 RESEARCH CONTEXT

3.2.1 The Afar Region

The Afar Regional State is one of the nine regional states of Ethiopia, and is the homeland of the Afar people. The Afar Triangle, the northern part of which the Danakil Depression, is part of the Great Rift Valley of Ethiopia and one of the lowest points in Africa. The southern part of the region consists of the valley of the Awash River, which empties into a string of lakes along the Ethiopia-Djibouti border. Based on the 2007 census conducted by the CSA, the Afar Regional State has a population of 1,390,273, consisting of 775,117 men and 615,156 women (CSA 2007:76). This region has 34 woredas; Awash Fentale is the woreda where the study was conducted.

3.2.2 Awash Fentale woreda

The Awash Fentale woreda is located 215 km east of Addis-Ababa, the capital city of Ethiopia. Awash is a market town in central Ethiopia. Located in Administrative Zone 3 of the Afar Region, above a gorge on the Awash River, after which the town is named, the town lies on the Addis Ababa-Djibouti Railway, which crosses the gorge by a bridge. It is the largest settlement in Awash Fentale woreda.

Awash lies outside the Awash National Park, which is known for its wildlife, for the Mount Fentale caldera, and for the “Filwoha” hot springs. Its market is held on Mondays, where Afar and “Kereyu” crafts can be found. Based on the 2007 census conducted by the CSA, this woreda had a total population of 29,775, of whom 15,471 are men and 14,304 are women. Taking the annual population growth of Ethiopia to be 2.5%, the current total population for Awash Fentale woreda was calculated by2.5% x29.775=744.375. This is the annual population growth for Awash Fentale woreda. To obtain the current total population for Awash Fentale woreda,744.375x10=7,443.75.This population count was thought to be the total increment within ten years (2007 to 2017).

3.3 RESEARCH DESIGN

Research design is concerned with creating a blueprint of the activities to perform in order to satisfactorily answer research questions identified in the exploration phase of a research study. This includes selecting a research method, operationalizing constructs of interest, and devising an appropriate sampling strategy (Bhattacherjee 2012:67).

The researcher used a quantitative, descriptive, cross-sectional design for this research.

3.3.1 Quantitative design

Quantitative research deals with quantities and relationships between attributes; it involves the collection and analysis of highly structured data in the positivist tradition and is appropriate in situations in which there is pre-existing knowledge, which permits the use of standardized data-collection methods (Bowling 2014:214).In this study, quantitative research was applied because most of the factors that influence maternal healthcare services utilization were measured.

3.3.2 Descriptive research

Descriptive research focuses on the characteristics of a population at a single point in time or on changes within a population over time (Houser 2015:258). Hence, in this research study, aspects such as the socio-demographic, socio-economic, cultural, and

other characteristics that are thought to affect maternal healthcare services and the preferences of women for delivery services were investigated within the study period.

3.3.3 Cross-sectional design

Cross-sectional research is used to simultaneously examine groups of subjects who are in various stages of development with the intent of describing the differences among them. A cross-sectional study is based on the assumption that the stages that are identified in different subjects at a single point in time are representative of a process that progresses over time. In cross-sectional research, the population of interest is carefully described (Houser 2015:258-259). In this research, women who gave birth starting from the last two years up to the time of data collection were involved. Furthermore, the factors that could hinder them from maternal healthcare services utilization were explored.

3.4 RESEARCH METHOD

The research method is defined as the steps, procedures, and strategies for gathering and analyzing data in a study (Polit & Beck 2014:385).

3.4.1 Sampling

Sampling is the statistical process of selecting a subset (called a “sample”) of a population of interest for purposes of making observations and statistical inferences about the population (Bhattacherjee 2012:67). In this study, probability sampling was applied. Probability sampling is a technique in which every unit in the population has a chance(non-zero probability) of being selected in the sample, and this chance can be accurately determined (Bhattacherjee 2012:67). As the researcher wanted a representative sample, stratified sampling was used.

Stratified sampling is used in situations in which a researcher knows some of the variables in the population that are critical for achieving representativeness (Grove & Gray 2015:260).

In stratified sampling, the sampling frame is divided into homogeneous and non-overlapping subgroups (called “strata”), and a simple random sample is drawn within each subgroup (Bhattacherjee 2012:67).Variables commonly used for stratification include age, gender, race and ethnicity, socio-economic status, diagnosis, geographic region, type of institution, etc. Stratification ensures that all levels of the identified variables are adequately represented in the sample (Grove & Gray 2015:260). In this study, the strata were based on the ethnicity of the study subjects. Study subjects were selected by simple random sampling from each stratum. Since the sampling fractions varied for each stratum, a disproportionate stratified sample was taken. The diagram below indicated how the stratified sampling technique was applied in the study area.

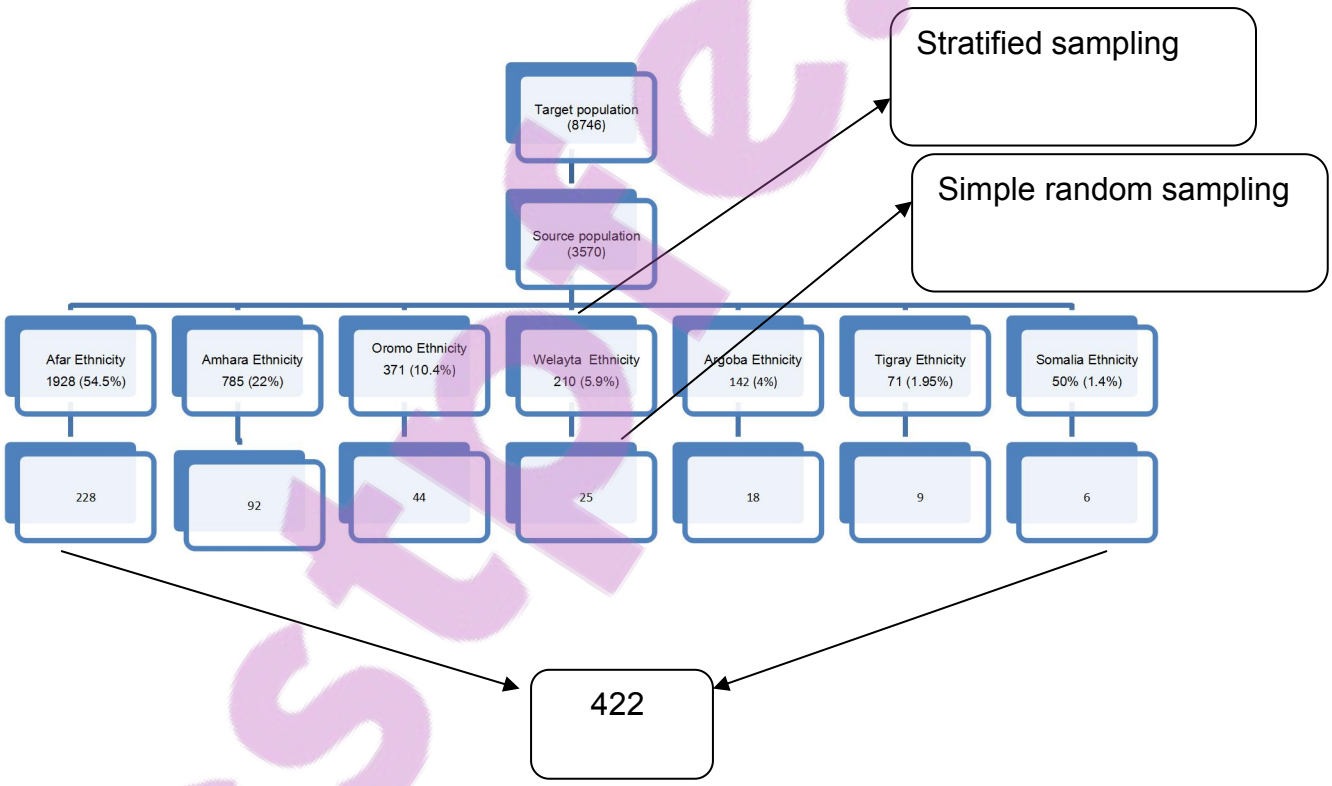

Fig.3.1 Diagram depicting application of stratified and simple random sampling

4.1.1 Population

Setting: The research setting is the environment within which studies are conducted (Houser 2015:256). The setting of this study was Awash Fentale woreda. Awash Fentale woreda is found in Zone 3 of the Afar National Regional State, Ethiopia, which is 200km from Addis Ababa.

The total population of Awash Fentale woreda for the year 2017 was 7,444+29,775=37,219 population, of which 17,880 were women and 19,339 were men. To obtain the target population, 23.5% of the population of Awash Fentale woreda were women between the ages of 15and49. Therefore, the target population was calculated as 23.5% x37,219=8,746. The list of candidates who gave birth in Awash Fentale woreda (including home delivery) within the last two years was obtained from Awash Health Center Maternal and Child Health (MCH) Department. Hence, the number of women who gave birth in Awash Fentale woreda within the last two years were 3,570.

To apply stratified sampling, identifying the proportion of each ethnic group was very important. The seven largest ethnic groups reported in the woreda are the Afar (54%), Amhara (22%), Oromo (10.4%), Welayta (5.9%), Argoba (4%), Tigray (1.9%), and Somali (1.4%); all other ethnic groups make up 0.5% of the population. Based on the above proportion of ethnicity, 422 participants were selected by the lottery method. Nearly 65.2% of the population are Muslims, 22% Orthodox Christians, 10.4% Protestants,2.4% Catholic Christians, and the remaining 0.2% are followers of traditional beliefs such as “Waquefecha” (Awash Fentale Health Office 2017). Based on the above information, several strata were made.

Population: A population is the entire set of subjects who are of interest to a researcher (Houser 2015:258-259). In this study, the population comprised the entire population of Awash Fentale woreda. This woreda has a total population of 29,775, of whom 15,471 are men and 14,304 are women. More than 90% of the population are pastoralists (CSA 2007:76).

The target population of this study consisted of all women of reproductive age group residing in Awash Fentale woreda of the Afar Regional State. The study population was

women of reproductive age group(15 to 49 years) (EDHS:2016:14-16) who gave birth in the past two years until the time of data collection.

Table 3.1: Sample size distribution by strata: Awash Fentale woreda

Strata by ethnicity	Percentage distribution	No. of respondents
Afar	54	228
Amhara	22	92
Oromo	10.4	44
Welayta	5.9	25
Argoba	4.4	18
Tigray	1.4	9
Somali	1.9	6
Total sample size	**100**	**422**

3.4.1.2 Sample

A sample is a subset of a population of interest for purposes of making observations and statistical inferences about that population (Bhattacherjee 2012:65).

The quantitative approach uses a sample since it is impractical to study a whole population due to time, financial, and other constraints. However, for generalization to the general population to be realistic, the sample should be representative of the population (Bhattacherjee 2012:66).

The sample population of this study was women of reproductive age group (15 to 49 years) who gave birth within the last two years and who are residents of Awash Fentale woreda.

3.4.1.2.1Sampling criteria

Inclusion criteria : Women of reproductive age group (15-49) residing in Awash Fentale woreda who gave birth within two years duration.

Exclusion criteria:

Any women in a reproductive age group residing in Awash Fentale woreda who gave birth beyond two years duration and women who didn't listen.

3.4.1.3 Sample size determination

As there are multiple variables treated in this study and since the proportion of women who use maternal healthcare services in Awash Fentale woreda was unknown, the sample size estimation was based on the maximum sample size for estimating single proportion approach (Bui &Taira 2010:414).

To calculate a sample size for proportion (P) at a given confidence interval with margin of error W, the following equation was used.

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

Where:
n=required sample size.
Zα/2=critical value for the chosen confidence level at 95% (standard value of 1.96).
p=estimated prevalence of the problem (variable being assessed).
w=margin of error of 5% (standard value of 0.05).

Taking the above formula into account with absolute precision (5%), and anticipated population proportion to be 50%, the total sample size n for this study was calculated as follows:

$n = \frac{(1.96)^2 x 50 x 50}{5)^2}$=384+10% non-response rate=422 study subjects will be selected.

Since the target population was less than 10,000, a correction formula was required to calculate the minimum sample size using the following equation:

nf=n/1+n/N

Where:

nf= Final sample size.
n= sample from an infinite population.

N= Sample from a finite population (the target population).

Therefore, according to the correction formula, the required sample size for this study was calculated as follows:

nf=422/1+8746=422/1+0.05≈422 study subjects selected for this study.

3.4.1.4 Ethical issues related to sampling

Permission to contact the list of women was obtained from Awash Fentale Health Centre. This health center has the authoritative power and responsibility of leading the healthcare facilities. Hence, a letter of permission was obtained from Awash Fentale Health Centre before contacting the study subjects (see Annexures B and D).

A written informed consent form (see Annexure E) was designed and was signed by each respondent before completing the questionnaire (see Annexure F). The researcher respected the right of the respondents to abstain from participation or to withdraw consent to participate at any time without reprisal. The participants were informed that the information they provided might not be of direct benefit to them but was extremely important to inform policy makers and program designers for stimulating discussion about the formulation of appropriate measures to address the factors that influence maternal healthcare services utilization by women in Awash Fentale woreda.

3.4.2 Data collection

Data collection is the process of acquiring subjects and collecting data for a study (Grove &Gray 2015:309). The actual steps of collecting the data are specific to each study and depend on the research design and measurement techniques (Grove &Gray 2015:310).

3.4.2.1 Data-collection approach and method

Data were collected using standardized structured questionnaires. The data were collected using questionnaires developed and included all the relevant variables to meet the objectives of the study. Prior to the development of the questionnaires, similar

studies focusing on factors that influence the utilization of maternal healthcare services were reviewed and a few modifications were made to the prepared questionnaires to address the set objectives (Tebekaw et al. 2015).Before the actual data collection, the data collectors were provided with the location and the number of women to interview based on the proportion of their ethnicity. The households of the respondents, regardless of their place of delivery, were obtained from the MCH Department of Awash Health Centre. All women aged 15 to 49 years who gave birth within the past two years and who had been living there for at least one year (but not visitors) were eligible for the interview. The data collectors were required to do only one revisit and those households missed during the second visit were assumed as non-respondents. The study respondents were randomly selected from their ethnic strata and the number of respondents in each ethnic group who were interviewed by the data collectors were proportionally allocated by the researcher. During the data collection, the researcher consulted the heads of Awash Fentale Health Office and Awash Fentale Health Centre and some community members to make the data-collection process more effective. In this study, verbal face-to-face interviews were administered using structured questionnaires. The questionnaires were developed in English and further explanations were given for better understanding of enumerators and respondents.

3.4.2.2 Development and testing of the data-collection instrument

In this study, the Demographic and Health Statistics (DHS) Women's Questionnaire was considered. However, this standardized questionnaire did not contain all the information needed for this particular study and the researcher was required to add information to the original questionnaire. For example, the DHS standardized questionnaire did not address information needed for preferences of maternal healthcare and PNC services.

The structuring and some components of the instrument were modeled from the Ethiopian DHS Women's Questionnaire but others were developed by the researcher based on the objectives and research questions of the study and used the literature review as a frame of reference. The questionnaire was structured into four main

sections, namely (1) household information, (2) background information of the respondent, (3) maternal healthcare services, and (4) other health-related issues.

Recall bias was taken into consideration during the development of the questionnaire. Women were therefore asked about their most recent or last birth and the date of birth of the child to minimize recall bias. The final version of the questionnaire was reviewed by the researcher's supervisors, public health experts, and a statistician, and was accepted for its validity.

Before the commencement of the data collection, the final draft of the questionnaire was pretested and refined using ten copies to ensure that all possible responses were included in the questionnaire. Pre-testing was done by trained enumerators under the supervision of the principal investigator to minimize possible errors. During the pre-test, questionnaires were completed by respondents who had similar characteristics to the sample but among those outside the selected areas.

3.4.2.3 Characteristics of the data-collection instrument

A questionnaire was used as the instrument to collect data. A questionnaire is a self-report form designed to elicit information through the written, verbal, or electronic responses of the subject (Grove &Gray 2015:304). A questionnaire consists of a formalized series of questions (Moule & Goodman 2014:322).The information obtained from the questionnaire was similar to that obtained by an interview, but the questions tend to have less depth. In this study, structured questionnaires were prepared, printed, and distributed in person. Questionnaires were used in this study to gather a broad spectrum of information or facts about women who gave birth in the last two years. Using these questionnaires, information about beliefs, attitudes, opinions, knowledge, and the intention of the study subjects was gathered. In conclusion, questionnaires are useful in gathering relevant information in a short period of time although they are limited in assessing the depth of the information.

3.4.2.4 Data-collection process

During the data-collection process, the researcher started by training the data collectors, recruiting study participants, implementing the study intervention, collecting data in a consistent way, and protecting the integrity and validity of the study(Grove & Gray 2015:310). In this study 6 data collectors who were trained for 3 consecutive days were selected to administer the questionnaires and to conduct the data collection within 30 days. All data collectors were experienced clinical nursing by profession who worked for more than three years in different areas of the Afar region.

The objective of this phase was to identify the factors that influence maternal healthcare services utilization in Awash Fentale woreda. To achieve this objective, the eligible subjects were interviewed by six trained health professionals using a structured questionnaire that was developed for this purpose.

The following steps of data collection were followed:

Step1: Obtaining permission for fieldwork

After obtaining ethical clearance from the University of South Africa (UNISA) (see Annexure C), a letter of approval to conduct fieldwork was obtained from the Bureau of Health of Afar National Regional State and the respective health offices of Awash Fentale woreda (see Annexure A and B). A letter of application requesting permission for the research was submitted to the respective offices (see Annexure D). The heads of the offices were briefed about the research topic, the relevance and appropriateness of the research, and the actual time needed to finish the data collection.

Step2: Selection of data collectors

The amount of time needed to complete the questionnaire was 25 minutes on average, which was estimated during the pre-test. It was then decided to recruit six interviewers to administer the questionnaires and to conduct the data collection within 30 days. Data collectors were selected from Awash Fentale woreda who were not engaged in providing maternal healthcare services at that time. This was done in consultation with Awash Fentale Health Centre. All the data collectors were required to have at least a

bachelor's degree in Nursing and were able to speak, read, and write using local languages. Some of the data collectors were able to speak more than two languages. Translators were pre-arranged in case the need arose but only two data collectors faced language barriers.

Step3: Training of data collectors

The training of the data collectors was conducted in Awash Fentale Health Centre in both the Amharic and English language to ensure that the concepts and questions were understood. The data collectors were given the chance to reflect on their ideas, including the challenges that could be faced. The training of the data collectors took three days. The training was facilitated by the principal investigator in collaboration with the head of Awash Fentale Health Centre. During the training, the informed concept, the parts of the questions on the questionnaire, and instructions were discussed in detail. The data collectors had the chance to discuss with the principal investigator any misconceptions, even during the actual fieldwork.

Step4: Questionnaire administration

This was a researcher administered questionnaire. A total of six interviewers, comprising five females and one male, carried out the data collection. Each data collector was given a support letter from Awash Fentale Health Centre. Data collection was mainly conducted early in the morning and after 3 pm in the afternoon to reduce the non-response rate, which was thought to happen as a result of high temperatures (harsh weather conditions) at mid-day. Every day at 6pm, the data collectors had meetings with the principal investigator to submit the completed questionnaires, discuss daily activities and challenges, and to prepare for the next day's activities. Witness to assent forms were also used for respondents less than 18 years old since they were less likely to decide on their own health issues.

Step5: Supervision

Supervision was a continuous process during the data-collection process. The principal investigator supervised the data collectors throughout the entire process. The completed questionnaires were reviewed by the principal investigator on a daily basis for inaccuracies. The supervisor checked whether the respondents were interviewed correctly by examining the questions and answers for consistency. During the supervision, it was found that one data collector had faced a challenge of not tolerating the hot weather that was prevailing in Awash Fentale woreda and she was replaced by the principal investigator.

3.4.3 Data analysis

The researcher reviewed the data for logical consistencies and completeness before making data entries. Data were entered into SPSS and cleaned also using SPSS. The description of the study population was done by analyzing the distribution of the respondents by the variables in terms of frequencies and percentages. Chi-square tests were conducted to assess any association and to measure the strength of association between independent and dependent variables. Similarly, binary logistic regression was applied to assess any association and the strength of the association between dependent and independent variables.

3.4.4 Ethical considerations related to data collection

3.4.4.1 Permission from institutions

Ethical clearance to conduct this study was obtained from the Higher Degrees Committee of the Department of Health Studies, UNISA (see Annexure C). The study was thought to respect human subjects by treating completed questionnaires as confidential in accordance with the university's and the country's (Ethiopia) ethical principles to the collection, maintenance, use, and dissemination of data and information.

3.4.4.2 Confidentiality

Confidentiality is the ethical principle of safeguarding the personal information gathered in a research study (Moule & Goodman 2014:60).The researcher did not report data about the participants without their explicit permission.

The researcher ensured confidentiality and anonymity through using case identification numbers instead of their actual names, and collected data were protected and kept safe from disclosure to unauthorized persons by locking them in a box in the office of the head of the health center. The respondents were assured of their confidentiality throughout their participation.

3.4.4.3 Veracity

Veracity is the ethical principle of telling the truth (Moule & Goodman 2014:58). The researcher and data collectors were honest with the participants and informed them of the potential risks and benefits, as well as the right to decide whether to participate or not without any coercion and the right to withdraw from the research study at any time.

3.4.4.4 Justice

Justice is the ethical principle of being fair to participants and not giving preference to some respondents over others (Moule & Goodman 2015:59). In this study, it was stated to respondents that there would be no discrimination or exploitation of participants on the ground of race, religion, sex, age, class, or sexual orientation.

3.4.4.5 Non-maleficence

Non-maleficence is the principle of doing no harm (Moule & Goodman 2015:59). It was the duty of the researcher to prevent physical, social, and economic harm. To reduce the economic and physical strain of mothers, the researcher mobilized the data collectors to make home-to-home visits to collect the necessary information. To protect mothers from social harm, the data collectors were well oriented by the researcher regarding the objectives of the data collection.

3.4.4.6 Beneficence

Beneficence is the principle of doing good for both research participants and society(Moule &Goodman 2014:58). In this study, the respondents were oriented regarding the benefits of this study to individual participants in particular and society in general.

3.4.4.7 Informed consent

Informed consent is the consent by participants in which the consent is accepted both legally and professionally and only when a participant has been properly informed and has agreed without any coercion (Moule & Goodman 2014:66).

Explanation of the information to the respondents was done verbally and the respondents were allowed to ask questions. Adequate time (3-5 minutes) was given to the respondents to make a decision whether to participate in the study and opportunities for discussion were given. The respondents were requested to sign the consent form attached to the questionnaire to give their permission.

3.4.4.8 Anonymity

The anonymity principle deals with “not using names and addresses of participants and assigning each of them as a unique study member” (Moule & Goodman 2014:67). This principle was applied as closely as possible when data were collected. The list of the unique study numbers together with the individuals’ name was kept separate and secure (Moule & Goodman 2014:67).

3.5 INTERNAL AND EXTERNAL VALIDITY OF THE STUDY

As the study applied quantitative methods, internal and external validity measures were taken to ensure the quality of the research design. Reliability and validity measures were employed to ensure the quality of the data-gathering instrument. The key measures the researcher took to ensure data and design quality are discussed in the following sections.

3.5.1 Internal validity

Internal validity, also called causality, examines whether the observed change in a dependent variable is indeed caused by a corresponding change in a hypothesized independent variable, and not by variables extraneous to the research context (Bhattacherjee 2012:34).

The researcher ensured internal validity by selecting an accurate research design, using a large sample size, ensuring that the samples were truly representative of the total population, and by collecting sufficient information about the study area and respondents.

3.5.2 External validity

External validity or generalizability refers to whether the observed associations can be generalized from the sample to the population (population validity), or to other people, organizations, contexts, or times (Bhattacherjee 2012:35).

To ensure the external validity of the study, study participants were randomly selected and the sample size maximized to the extent that the researcher could be confident to draw conclusions to generalize the findings to the population of this study.

3.5.3 Content validity

Content validity is the degree to which an instrument has an appropriate sample of items for the construct being measured (Polit &Beck 2014:205).In this research, the researcher attempted to include an appropriate sample of items while he was developing the data-collection instrument.

3.5.4 Construct validity

Construct validity deals with the key criteria for assessing research quality and is often linked to measurement (Polit & Beck 2014:206). Polit and Beck (2014:207) stated that construct validity involves analysis and testing relationships predicted on the basis of well-grounded conceptualization.

3.5.5 Reliability

The reliability of measures can be discovered by assessing the internal consistency of the measures with item-item, item-total, and by examining the stability of scale scores (Bowling 2014:53).As a self-administered questionnaire was used in this research study, there was no interviewer bias. Clear instructions were provided in the questionnaire to direct the respondents and to ensure reliability. The questionnaire was pre-tested by drawing one person from each ethnic group, which allowed administering the questionnaire to evaluate the validity, reliability, appropriateness, and sufficiency of the questions, and to measure how much time it took to complete the questionnaire. This was done one month ahead of starting the actual research, where the data were analyzed and questions were revised as needed.

3.6 CONCLUSION

In this chapter, the research design and methodology applied in conducting this study were described and discussed in detail. A quantitative cross-sectional study design was utilized to conduct this study in Awash Fentale woreda. Notable aspects of the data-collection instrument were explained. The basic principles of public health research ethics applied to the study were also discussed. The next chapter presents the research findings of the study.

CHAPTER 4
DATA PRESENTATION, ANALYSIS, AND DESCRIPTION OF THE RESEARCH FINDINGS

4.1 INTRODUCTION

The main aim of this research was to assess the factors that influence maternal healthcare services utilization in Awash Fentale woreda in order to develop strategies and to formulate appropriate measures to solve the identified problems in the study area. This chapter presents the data analysis and data interpretation. The data are analyzed and presented as both descriptive and inferential statistics. The findings are presented to answer the following research questions:

1. What are the factors that influence women's utilization of ANC, DC, and PNC services?
2. What are women's preferences in terms of maternal healthcare services?
3. What are the barriers to maternal healthcare services utilization?
4. How satisfied are women with maternal healthcare services?
5. Which implementation strategy can be developed to increase maternal healthcare services utilization?

4.2 DATA MANAGEMENT AND ANALYSIS

It is a fact that data quality issues may affect the interpretation of research findings. Hence, in this study care was taken to maintain the quality of the data by pretesting the questionnaires and training interviewers and supervising fieldworkers. The response rate and the age reports were evaluated before further statistical analysis was performed. The data were collected and prepared for analysis, which included entering the data into an electronic file using a statistical package (Antonius 2013:48). In this study, the software used for analysis was IBM's SPSS 25. This software produces tables, charts, and numerical statistical measures with the click of a mouse. These numerical results are interpreted and their meaning is specified in this chapter.

4.3 RESEARCH RESULTS

4.3.1 Demographic characteristics

In this subsection, the demographic characteristics of the respondents, including age, place of delivery, time spent to reach the healthcare facility, mode of delivery, parity, current marital status, the educational status of the women, their occupation, ethnicity, religion, and the husband's educational status, occupation, and income, are presented.

4.3.1.1 Age of respondents

Four-hundred and twenty-two (422) respondents were in the age range 15 to 40. More than a quarter of the participants (29%; n=123) were young women aged15 to 24 years, and only 8.3% (n=35) women were 15 to 19 years old. The mean age of the respondents was 26.9 years, with standard deviation of nearly five years. Women in the age group 20 to 39 years accounted for nearly 90% (n=380) of the participants (see Figure 4.1).

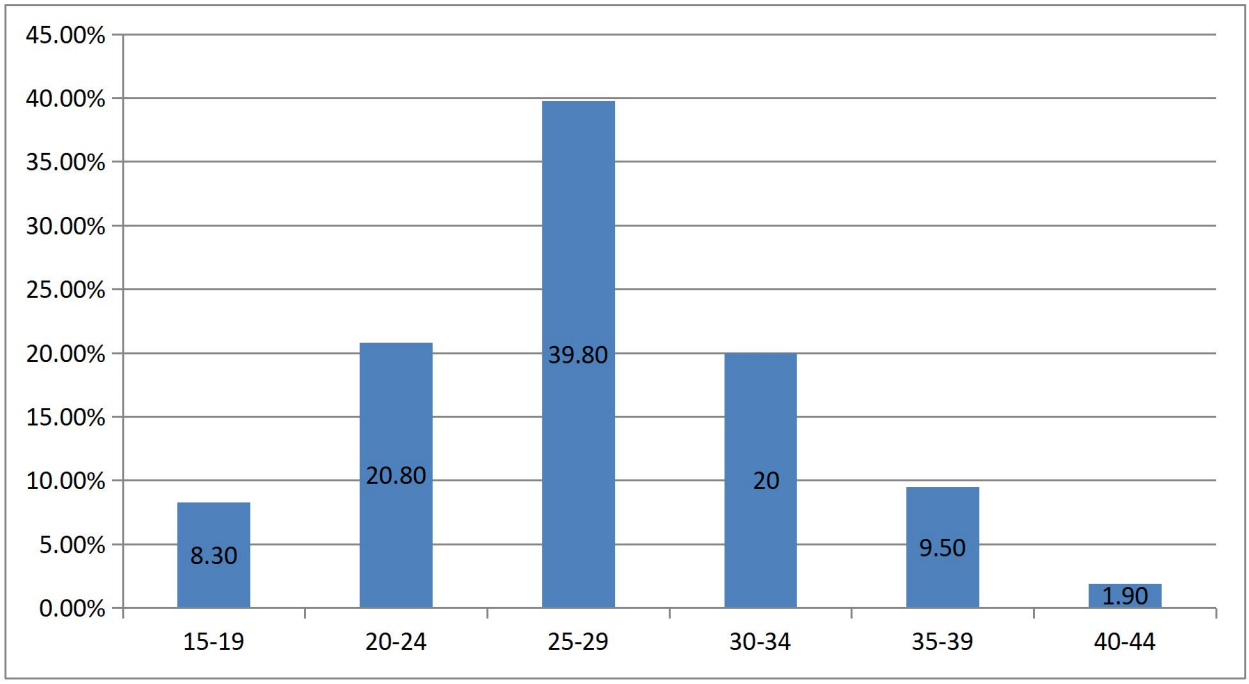

Figure 4.1: Proportion of women in five age groups (N=422)

4.3.1.2 Place of delivery

Out of 422 women selected for the interviews, 80 (19%) women gave birth at home and the rest (n=342; 81%) delivered at a health care facility.

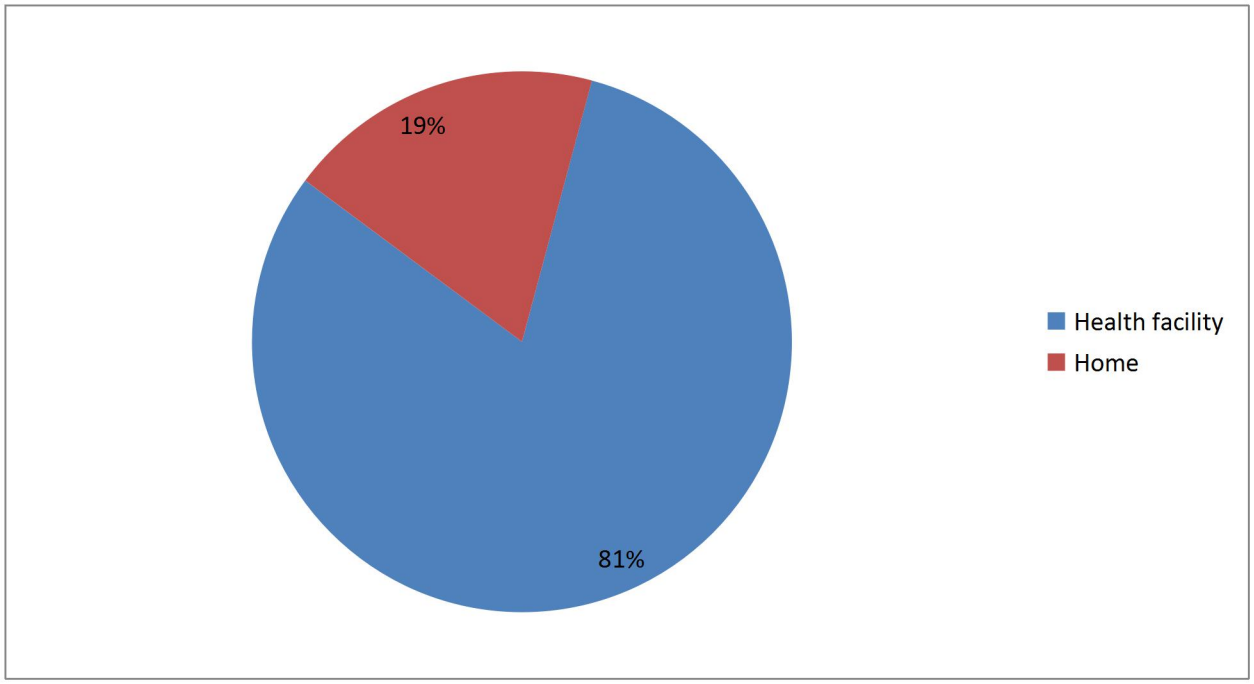

Figure 4.2: Proportion of respondents who gave birth at a healthcare facility versus at home

4.3.1.3 Time spent to reach healthcare facility

All of the respondents who participated in the study were asked how long it took them to reach a healthcare facility. More than half (n=239; 56.6%) of the women responded that it took them less than an hour to reach a health care facility, while for 131(31%) of the women, it took them one hour and more. The remaining 52 (12.3%) respondents could not estimate the time spent to reach a healthcare facility (see Figure 4.3).

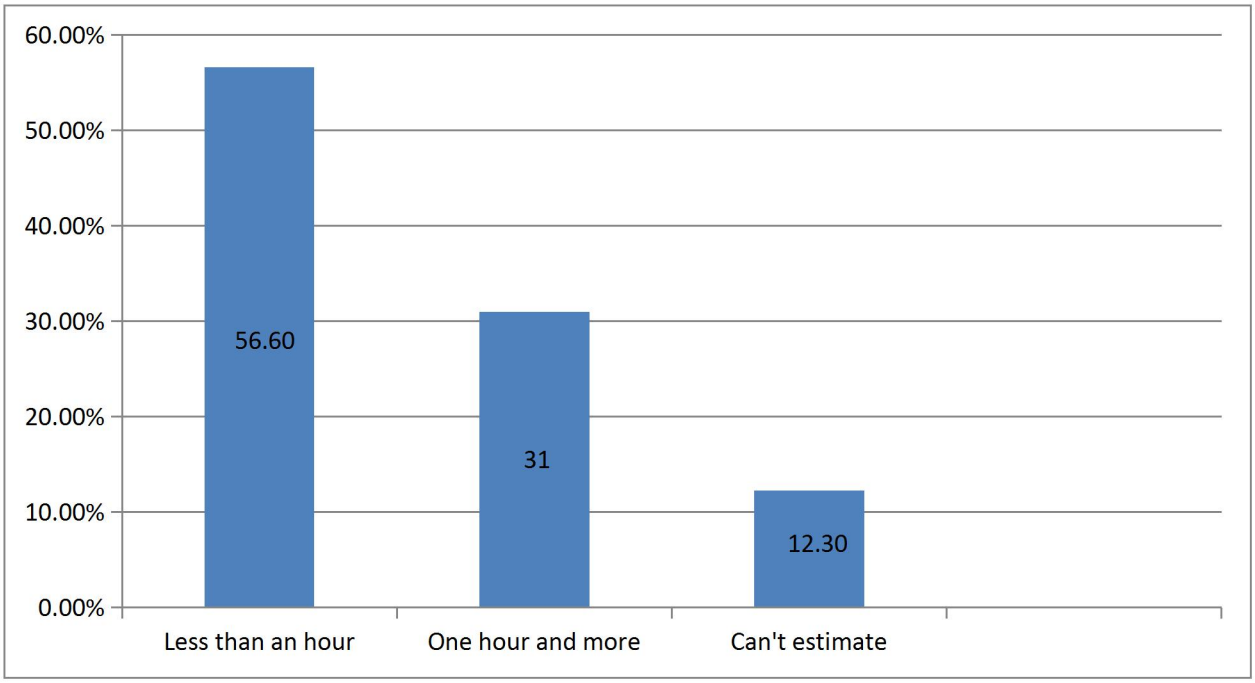

Figure4.3: Time spent to reach healthcare facility

4.3.1.4 Mode of delivery

The respondents were also asked about the mode of delivery. Their responses showed that 371(87.9%) of the women had spontaneous vaginal delivery, while 51(12%) had caesarian sections (see Figure 4.4).

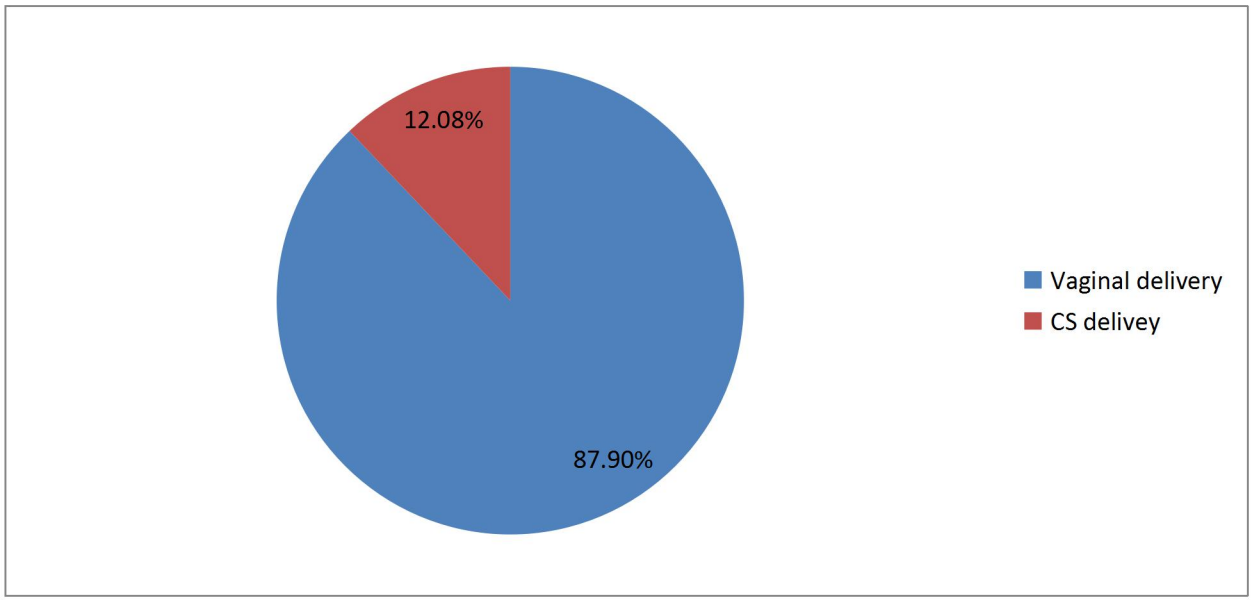

Figure 4.4: Mode of delivery

4.3.1.5 Parity (number of living children)

Table 4.1 shows the parity (only living children)of the study subjects. The number of living children ranged from 0to ten per woman. All (100%;N=422) the women had at least one child who was alive. More than half (56%; n=235) of the respondents had one to two living children and the average number of living children that a woman had was 2.68. The maximum number of living children that a woman had in Awash Fentale woreda was ten.

Table 4.1: Proportion of women by parity

Parity(Number of living children)	Frequency	Percentage
1	91	21.6
2	144	34.1
3	86	20.4
4	47	11.1
5	21	5.0
6	20	4.7
7	4	0.9
8	3	0.7
9	1	0.2
10	2	0.5
Total	**422**	**100.00**

4.3.1.6 Current marital status

Nearly 97% (n=406) of the respondents were either married or cohabitating/living together with their partners. The remaining 3%(n=13) of the women were never married, widowed, and/or divorced, as indicated in Table 4.2.

Table 4.2: Proportion of women by marital status

Marital status	Frequency	Percentage
Married	406	96.2
Cohabitating	2	0.5
Never married	4	0.9
Widowed	5	1.2
Divorced	4	0.9
Total	**422**	**100.00**

4.3.1.7 Educational status of women

Table 4.4 indicates the educational status of the respondents. The literacy rate of the women was 63% (n=266), with 37% (n=156) of the respondents not having received formal education and 24% (n=103) of the women having attained tertiary education.

Table 4.3: Educational status of the respondents

Educational status	Frequency	Percentage
No education	156	36.9
Primary education	48	11.4
Secondary education	115	27.25
Tertiary education and above	103	24.4
Total	**422**	**100.00**

4.3.1.8 Women's occupation

Nearly half (49.1%;n=207) of the respondents were not employed. Of the respondents, 27.3% (n=115) were government employees, 13%(n=55) were self-employed, 4.5% (n=19) were private employees, and only 2.1% (n=2.1) were NGO employees. Four percent (n=17) of the participants had unspecified jobs, as indicated by Figure 4.5.

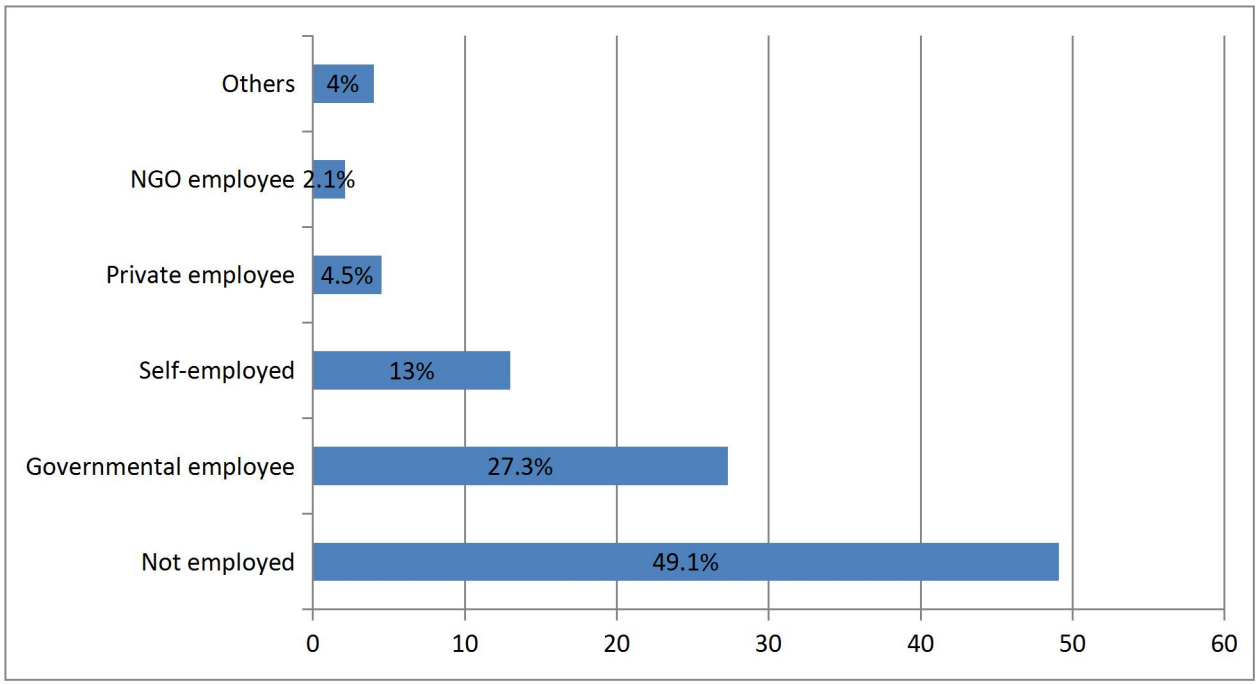

Figure 4.5: Percentage distribution of the respondents' occupational status

4.3.1.9 Ethnicity

In terms of ethnic composition, 54% (n=228) of the respondents belonged to the Afar ethnic group, while 22% (n=93) were from the Amhara ethnic group. The Oromo, Welayta, Argoba, and Tigray ethnic groups constituted 10.4% (n=42),5.9% (n=25), 4% (n=17), and1.9% (n=8) respectively. Other ethnic groups constituted 0.5% (n=2), as illustrated by Figure 4.6.

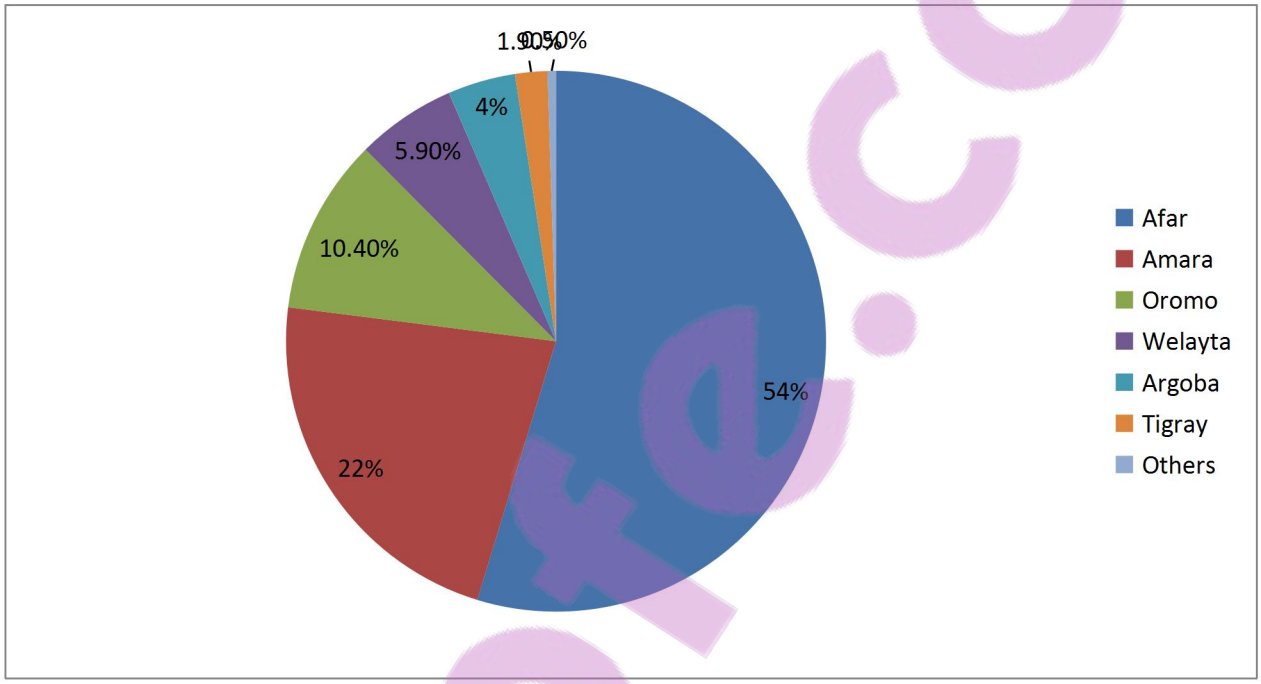

Figure 4.6: Ethnic background of the respondents

4.3.1.10 Religion

Approximately 65% (n=275) of the study participants were Muslims, nearly one-fifth (n=22) of the respondents were Orthodox Christians, 10.4% (n=44) were Protestant Christians, 2.4% (n=10) were Catholic Christians, and only 0.2% (n=1) were traditional belief followers, as indicated by Table 4.4.

Table 4.4: Frequency distribution of respondents by type of religion

Religion	Frequency	Percentage
Orthodox Christian	92	21.8
Muslim	275	65.2
Protestant	44	10.4
Catholic	10	2.4
Traditional beliefs	1	0.2
Total	**422**	**100.00**

4.3.1.11 Husbands' educational status

Nearly half (47%; n=198) of the respondents' husbands had attained a secondary education, and 23% (n=98) of the husbands did not have any educational background.

Table 4.5: Educational status of the respondents' husbands

Husbands' educational status	Frequency	Percentage
No education	98	23.2
Primary education	57	13.5
Secondary education	198	47
Tertiary education and above	69	16.3
Total	**422**	**100.00**

4.3.1.12 Husbands' occupation

More than 46% (n=196) of the husbands were government employees, 21% (n=89) were self-employed,10.4% (n=44) were private employees,7.1% (n=30) were NGO employees, and 10.2% (n=43) were unemployed, as indicated by Table 4.6.

Table 4.6: Occupational status of the respondents' husbands

Husbands' occupation	Frequency	Percentage
Not employed	43	10.2
Government employee	196	46.4
Private employee	44	10.4
NGO employee	30	7.1
Self-employed	89	21.1
Other	20	4.7
Total	**422**	**100.00**

4.3.1.13 Husbands' income

Nearly a quarter (n=103) of the respondents' husbands had an income of ≤1,500 ETB, while 63%(n=266) had an income that ranged from 1,501 to 5,000ETB. The remaining 12.6% (n=53) of the respondents' husbands had an income of≤5,001ETB.

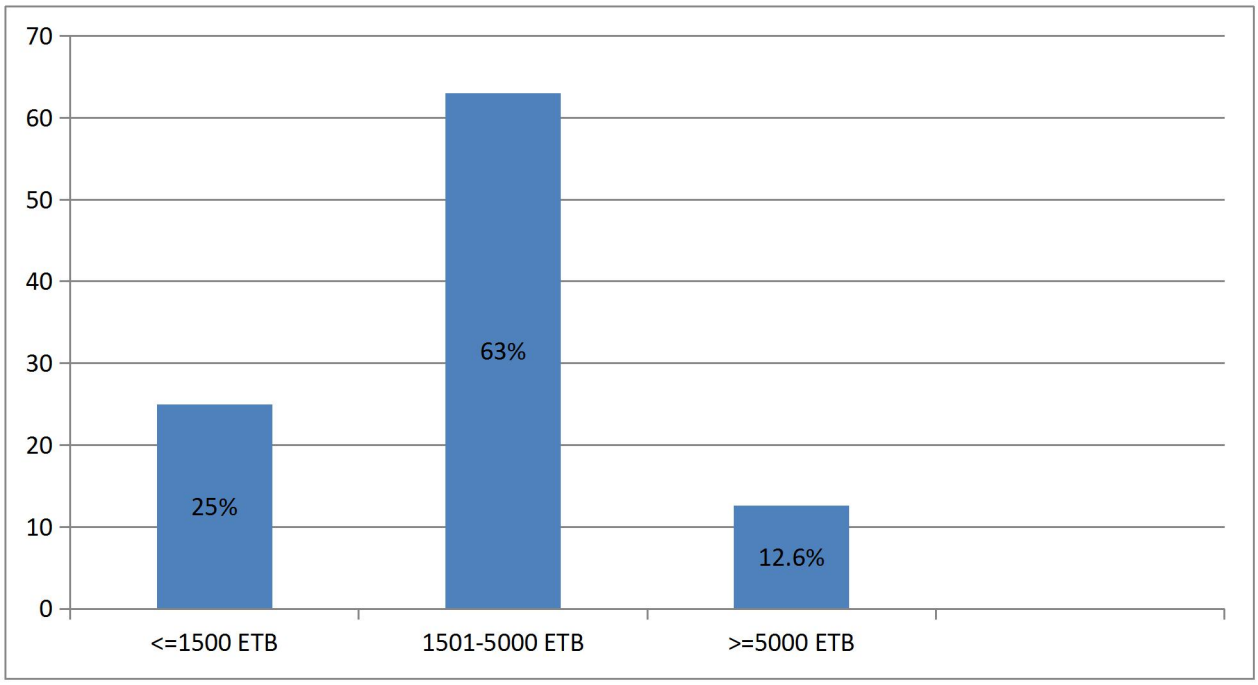

Figure 4.7: Percentage distribution of husbands' income

4.3.1.14 Percentage and frequency distribution of respondents' age, employment, ethnicity, and income by their level of education

Table 4.7 indicates that 20% (n=7) of women aged 15 to 19 years had completed primary education. Similarly, this age group had the highest percentage of women completing secondary education. On the other hand, more than 30% (n=50) of women between the ages of 25 and 29 years had completed tertiary education.

Table 4.7: Percentage and frequency distribution of the respondents' age, employment, ethnicity, and income by level of education

Item	No education	Primary education	Secondary education	Tertiary education	Total
Age					
15-19	37.1	20	37.1	5.7	100.00
20-24	35.2	7.9	35.2	21.6	100.00
25-29	32.7	11.9	25	30.4	100.00
30-34	37.6	10.6	25.9	25.9	100.00
35-39	52.6	13.2	15.8	18.4	100.00
40-44	62.5	0	12.5	25	100.00
Total	**37**	**11.4**	**27.2**	**24.4**	**100.00**
Women's employment					
Unemployed	57	16	23.4	3.6	100.00
Employed	16	6	30.5	47.5	100.00
Total	**37.4**	**11.4**	**26.3**	**24.4**	**100.00**
Ethnicity					
Afar	50	9.6	22.8	17.5	100.00
Amhara	11	17.4	33.7	38	100.00
Oromo	27	6.8	36	29.5	100.00
Welayta	8.5	11.4	28.5	51.4	100.00
Argoba	53	5.8	17.6	23.5	100.00
Somali	100	0	0	0	100.00
Tigray	12.5	25	25	37.5	100.00
Other	50	0	50	0	100.00
Total	**37**	**11.4**	**26**	**26.7**	**100.00**
Income in ETB					
<=1,500	51.6	13.9	27.8	6.7	100.00
1,501-5,000	7.5	5.2	26.8	60.4	100.00
>=5,001	14.3	28.6	14.3	43	100.00
Total	**37**	**11.4**	**27**	**24.4**	**100.0**

4.3.2 Housing and environmental characteristics of the respondents

4.3.2.1 Housing characteristics

In Awash Fentale woreda, the respondents were asked about access to electricity, radio, television, telephone, personal computer, Bajajs, refrigerators, and carts, as presented in the next subsection.

(a) Percentage and frequency distribution of household properties of the respondents

More than half (n=236) of the respondents had their own houses. Eighty-three percent (n=351) of the respondents had electricity in their houses. Furthermore, more than half (56.6%; n=239) of the participants owned a radio, 316 (74.9%) owned a television, 333 (78.9%) owned a telephone,87 (20.6%) owned a personal computer,158 (37.4%) owned a refrigerator ,102 (24.2%) owned a Bajaj, and 26 (6.2%) owned a cart.

Table 4.8: Percentage and frequency distribution of the household properties of the respondents

Availability of household items	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Electricity	351	83.2	71	16.8
Radio	239	56.6	183	43.4
Television	316	74.9	106	25.1
Telephone	333	78.9	89	21.1
Personal computer	87	20.6	335	79.4
Refrigerator	158	37.4	264	62.6
Bajaj	102	24.2	320	75.8
Cart	26	6.2	396	93.8

4.3.2.2 Environmental conditions

The respondents were asked about the number of sleeping rooms in their house, as well as access to safe drinking water and access to toilet facilities.

(a) Respondents' sleeping rooms

Nearly 60% (n=249) of the respondents had only one sleeping room, 30% (n=127) had two sleeping rooms, and 11% (n=46) of the respondents had three or more sleeping rooms.

Table 4.9: Percentage distribution of the respondents' sleeping rooms

Number of sleeping rooms	Frequency	Percentage
1	249	59
2	127	30
3	38	9
4	6	1.4
5	2	0.5
Total	**422**	**100.00**

(b) Respondents' source of drinking water

Of the respondents, 79.4% (n=335) used tap water (piped into the house), 10.4% (n=44) used public taps,6.4% (n=27) used protected springs, and only 3.8%(n=16) of the respondents used the Awash River for water-drinking purposes.

Table 4.10: Percentage distribution of the respondents' source of drinking water

Source of drinking water	Frequency	Percentage
Tap water (piped into house)	335	79.4
Protected well/spring	27	6.4
Public tap	44	10.4
Awash River	16	3.8
Total	**422**	**100.00**

(c) Toilet facilities

With regard to the type of toilets, pour flush latrine (private or shared) constituted 66.8% (n=282), pit latrine 17.8% (n=75), public toilet 9.7% (n=41), and the remaining 5.7% (n=24) of the respondents claimed to use open defecation (forest) as a toilet, as presented in Figure 4.8.

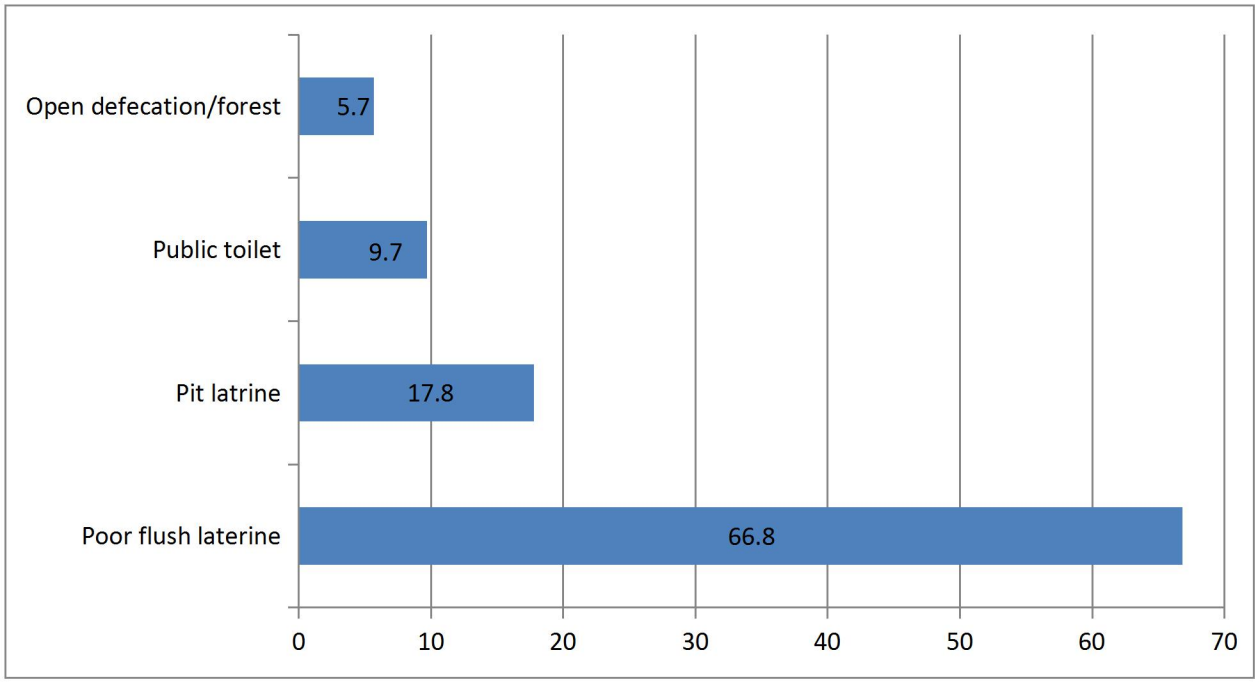

Figure 4.8: Percentage distribution of the respondents' toilet facilities

4.3.3 Maternal health care services utilization

In this subsection, aspects under maternal healthcare services utilization, including ANC, DC, and PNC services, the factors that affect the services, and barriers to healthcare services utilization, are presented.

4.3.3.1 Pregnancy intention

The respondents were asked whether their last birth was intended or unintended during the time of conception. An unintended birth was classified as either wanted later or wanted no more children. Approximately 20% (n=84) of the women indicated that their last-born child was unintended at the time of conception, of which 3.3 %(n=14) of the births were not wanted at the time of conception and 0.7% (n=3) were completely unwanted. The prevalence of intended births was nearly 80% (n=337), as indicated in Figure 4.9.

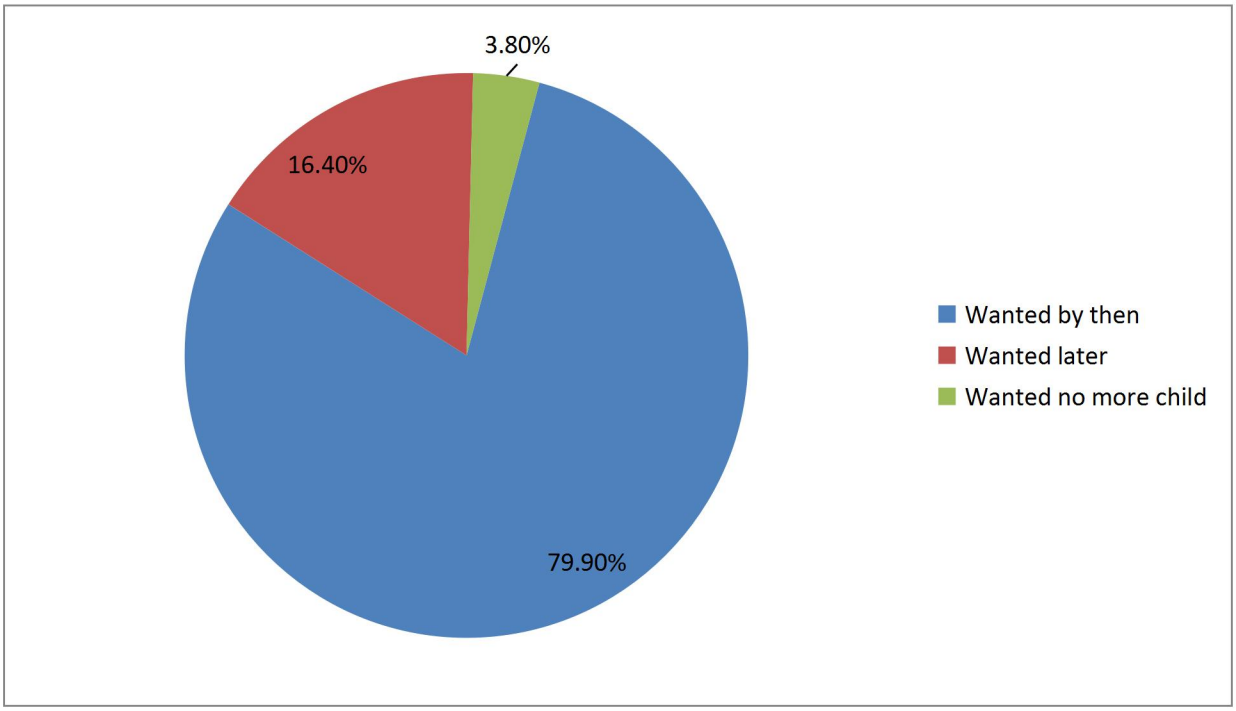

Figure 4.9:Prevalence of unintended births

4.3.3.2 ANC services utilization

In this subsection, the number and frequency of ANC visits and the timing of the visits are presented.

(a) ANC visits

Out of 422 respondents, 80.6% had at least one ANC visit and at most five visits, while 19.2% (n=82) of the respondents residing in Awash Fentale woreda did not have any ANC visits during their last pregnancy, as indicated in Table 4.11.

Table 4.11: Prevalence of ANC visits

ANC visit	Frequency	Percentage
Yes	340	80.6
No	82	19.4
Total	**422**	**100.00**

(b) Frequency of ANC visits

The findings revealed that 185 respondents (54.7%) had inadequate ANC visits (<4visits), while 155 (45.6%) of the respondents had adequate ANC visits (>=4 visits).

Table 4.12: Frequency of ANC visits

Adequacy of ANC visits	Frequency	Percentage
Adequate	185	54.4
Inadequate	155	46.6
Total	**340**	**100.00**

(c) Timing of ANC visits

This study found that 47.4% (n=164) of ANC clients initiated their first visit within 12 weeks of gestation. However, more than half of ANC clients (52.6%;n=176) had already initiated their first visit after the first trimester (see Figure 4.10).

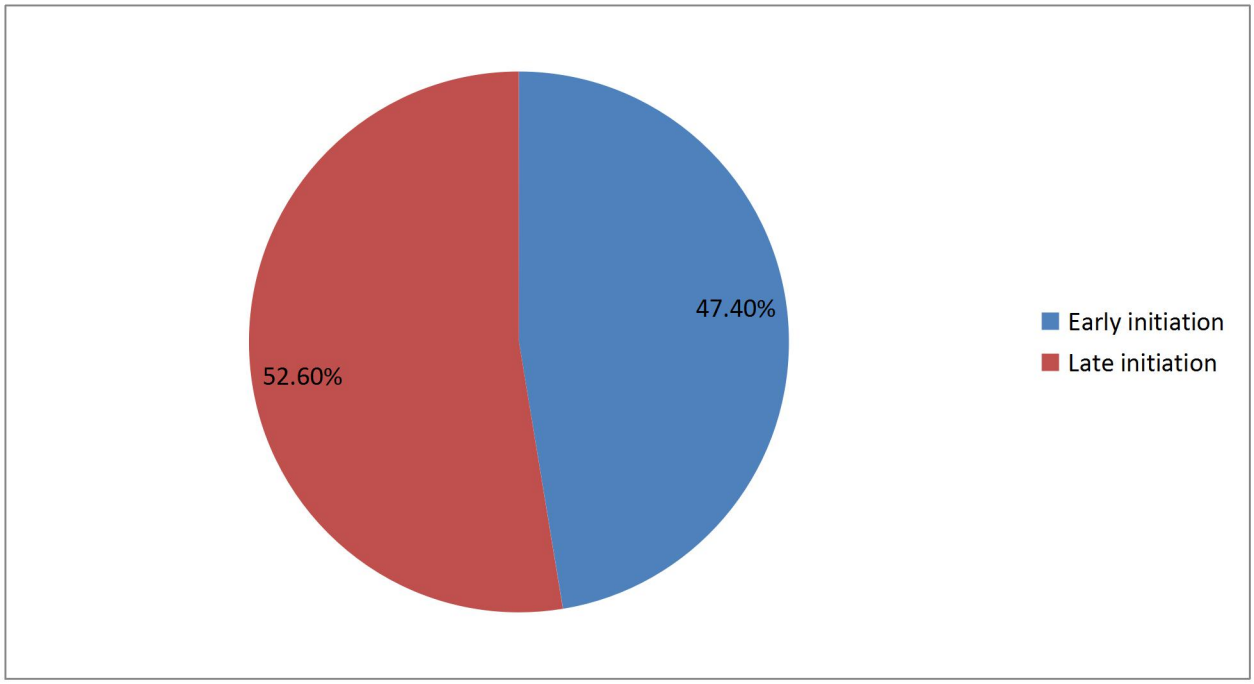

Figure 4.10: Timing of initial visits of ANC clients

(d) Reasons for women choosing health facilities for their ANC services

Table 4.13 depicts the reasons for women's preferences in terms of their place of ANC services. Of 422 women, 39% (n=166) preferred a healthcare facility to access ANC services due to perceived good quality of services, while 14.2% (n=60) chose healthcare facilities for their ANC services because the distance to reach the facility was short. Nine percent (n=38) of the respondents preferred healthcare facilities for their ANC services due to their previous experiences of good quality of services at healthcare facility level. Perceived low cost of services, short waiting time, husbands' influence,

experienced low cost of services, and family and friends' influence were some of the reasons mentioned by the respondents for their preferences to obtain ANC services at a healthcare facility.

Table 4.13:Reasons for choosing healthcare facilities for ANC services

Reasons for choosing healthcare facilities	Frequency	Percentage
Perceived good quality of service	166	39
Short distance	60	14.21
Previous experiences of good-quality service	38	9
Perceived low cost of service	19	4.5
Short waiting time	18	4.2
Husbands' influence	16	3.8
Experienced low cost of service	15	3.5
Family's influence	10	2.4
Friends' influence	3	0.7
No reason at all	77	18.24
Total	**422**	**100.00**

(e) Components of previous obstetrical histories asked by healthcare workers for women who had ANC visits

Out of the 422 respondents, only 76 (18%) were asked by the healthcare provider about their previous history of still births and 52 (12.3%) were asked about the death of an infant. The history of heavy bleeding during the previous ANC visits was asked from 140 (33.2%) of the women who had an ANC visit.

Table4.14: Components of previous obstetrical histories asked by healthcare workers

Component ofprevious obstetrical histories	Frequency			Percentage		
	Yes	No	Do not remember	Yes	No	Do not remember
Previous history of still birth	76	241	28	18	57	6.6
Death of infants	52	265	28	12.3	62.8	6.6
Heavy bleeding	140	184	21	33.2	43.6	5
Assisted delivery	53	253	39	12.6	60	9.2
Abortion	56	245	44	13.3	58.1	10.4

(f) Physical examinations carried out by healthcare workers for women who made ANC visits

In response to the questions on the physical examinations carried out during ANC visits, 239 (56.6%) of the respondents answered that their weight was measured and 290 (68.7%) responded that their blood pressure was checked. The respondents were also asked whether they were checked for the presence of anemia, syphilis, and HIV. It was found that 203 (48.1%) of the women were checked for the presence or absence of anemia, 140 (33.2%) for syphilis, and 293 (69.4%) for HIV, as presented in Table 4.15.

Table 4.15: Physical examinations carried out by healthcare workers

Physical examinations performed	Frequency			Percentage		
	Yes	No	Do not remember	Yes	No	Do not remember
Weight measured	239	86	20	56.6	20.4	4.7
Height measured	144	152	49	34.1	36	11.5
Blood pressure	290	39	16	68.7	9.2	3.8
Fetal heart beat	196	104	45	46.4	24.6	10.7
Uterine height	50	277	68	11.8	53.8	16.1
Anemia diagnosis	203	77	65	48.1	18.2	15.4
Syphilis diagnosis	140	119	86	33.2	28.2	20.4
HIV counseling	303	32	10	71.8	7.6	2.4
HIV test	293	50	3	69.4	11.8	7

(g) Interventions made by healthcare providers for women who made ANC visits

In this subsection, aspects such as prophylactic medications, including tetanus toxoid injections, iron supplements, anti-malaria, and anti-helmintics, are assessed. Moreover, aspects including exclusive breast feeding, benefits of breast feeding, and family planning and counseling about danger signs are also discussed.

- **Prophylactic medication**

The respondents were asked about basic antenatal interventions during their visits to healthcare facilities. The results showed that 304 (72%) of the women who participated in the study were given tetanus toxoid injections. Of the women, 284 (67%) reported that they took iron tablets during their ANC visits. Since Awash Fentale woreda is a malaria-endemic area, the respondents were also asked whether they took any anti-

malaria medication during their pregnancy period. Only 21 (5%) of the 345 respondents who had ANC visits took anti-malaria drugs during their ANC visit.

Table 4.16: Prophylactic medication taken

Intervention	Frequency			Percentage		
	Yes	No	Do not remember	Yes	No	Do not remember
Tetanus toxoid injection	304	28	14	72	6.6	3.3
Iron supplements	284	42	20	67.3	10	4.7
Anti-helmintics	45	270	31	10.7	64	7.3
Anti-malaria drugs	21	298	27	5	70.6	6.4

- **Advice given to pregnant women**

Only 36.7%(n=155) of the women who made ANC visits reported that they were advised about the benefits of breast feeding. Similarly, nearly 36% (n=151) of these women claimed that they were advised about the benefits of family planning. Of the respondents, 73.5% (n=310) were counseled to give birth at a health care facility and 65% (n=276) were advised about the danger signs of pregnancy.

Table 4.17: Advice given to pregnant women

Intervention	Frequency			Percentage		
	Yes	No	Do not remember	Yes	No	Do not remember
Exclusive breast feeding	179	116	51	42.4	27.5	12.1
Benefits of breast feeding	155	135	56	36.7	32	13.3
Benefits of family planning	151	136	59	35.8	32.2	14
Counseled to give birth at healthcare facility	310	29	6	73.5	6.9	1.7
Counseled about the danger signs of pregnancy	276	54	15	65.4	12.8	3.4

(h) Women's awareness about common danger signs and complications of pregnancy

Nearly 52% (n=219) of the respondents identified fever as a common danger sign of pregnancy, while 24.6% (n=104) identified severe headache as a common danger sign.

Of the respondents, 69.7% (n=294) were able to identify vaginal bleeding as a common danger sign and complication of pregnancy, and 71% (n=302) identified postpartum hemorrhage (PPH) as a common sign and complication of pregnancy. The respondents registered lowest percentages in identifying breathlessness, prolonged labor, and blurred vision as common danger signs and complications of pregnancy.

Table 4.18: Women's awareness of common danger signs and complications of pregnancy

Danger sign/complication	Frequency			Percentage		
	Yes	No	Do not remember	Yes	No	Do not remember
Fever	219	135	68	51.9	32	16.1
Swelling of hands and face	157	174	91	37.2	41.2	21.6
Abdominal pain	155	192	75	36.7	45.5	17.8
Severe headache	104	237	81	24.6	56.2	19.2
Vaginal bleeding	294	75	52	69.7	17.8	12.3
Blurred vision	38	277	107	9	65.6	25.4
Breathlessness	32	274	116	7.6	64.9	27.5
Reduced body movement	99	209	114	23.5	49.5	27
High blood pressure	227	140	55	53.8	33.2	13
Convulsion	42	304	76	10	72	18
PPH	302	78	42	71.6	18.5	10
Prolonged labor	33	294	95	7.8	69.7	22.8

4.3.3.3 Barriers to delivering at a specific healthcare facility

Women who gave birth at home were asked about the reasons that hindered them from delivering at a health care facility. The respondents were allowed to give two possible reasons and their responses are presented in Table 4.19. The first reason mentioned for choosing home as the place of delivery was that family members did not allow them to give birth at a health care facility (n=41; 15.5%). Not having complications during their previous pregnancy or delivery was stated as a reason for not choosing a health care facility to give birth by 39 (14.72%) women, while the distance of the health care facility from their home was indicated by 32 (12%) women. Husbands' influence (11.7%), long waiting time (7.9%), fear of operation (7.2%), and little respect from health care workers (4.9%) were among the reasons given by the respondents to not give birth at a health care facility.

Table 4.19:Barriers for women for delivering at a health care facility (N=80)

Barriers for women for delivering at a healthcare facility	Frequency	Percentage
Family members did not allow it	41	15.5
No complications	39	14.72
Long distance	32	12.07
Husband did not allow it	31	11.7
Long waiting time	21	7.9
Fear of operation	19	7.2
High cost of service	14	5.3
Friends' influence	13	4.9
Little respect from healthcare workers	13	4.9
Lack of privacy	13	4.9
Do not trust healthcare facility	10	3.8
Unavailability of medical equipment	6	2.2
Facility closed	4	1.5
Unavailability of drugs	3	1.1
Unavailability of quality service	3	1.1
Previous bad experience at a healthcare facility	3	1.1
Total responses	**265**	**100.00**

4.3.3.4 Responses of health care providers regarding the barriers for accessing maternal health care services in Awash Fentale woreda

To understand the responses of health care workers regarding the reasons why women in Awash Fentale woreda do not use health care facilities to obtain maternal health care services, 25 health care workers engaged in providing maternal healthcare services were queried using a structured questionnaire. Their responses are summarized in Table 4.20. Twelve (15.5%) of the health care workers responded that no previous complications was a barrier for maternal health care services utilization, while long distance (n=10; 12.5%), long waiting time (n=8; 10%), family members not allowing it(n=8; 10%),not trusting the health care facility (n=6; 7.5%), husbands' influence (n=6; 7.5%), little respect from health care workers (n=6; 7.5%), lack of privacy (n=6; 7.5%), and fear of operation (n=6; 7.5%) were among the reasons given by the health care workers engaged in providing maternal health care services in Awash Fentale woreda (see Table 4.20).

Table 4.20:Responses of healthcare providers regarding the barriers for maternal health care services (N=25)

Reasons for choosing home delivery	Frequency	Percentage
No complications	12	15
Long distance	10	12.5
Long waiting time	8	10
Family did not allow it	8	10
Donot trust healthcare facility	6	7.5
Husband did not allow it	6	7.5
Little respect from healthcare workers	6	7.5
Lack of privacy	6	7.5
Fear of operation	6	7.5
High cost of service	2	2.5
Unavailability of medical equipment	2	2.5
Unavailability of drugs	2	2.5
Unavailability of quality service	2	2.5
Friends' influence	2	2.5
Previous bad experience at a healthcare facility	2	2.5
Facility closed	0	0
Total responses	**80**	**100.00**

4.3.3.5 Type of skilled attendant

The majority (n=251; 59.5%) of the participants were attended to by clinical nurses or midwives and 16% (69) of the women were attended to by physicians and TBAs respectively, while 31(7.3%) of the respondents were attended to by either a gynecologist or obstetrician and the remaining two (0.5%) women were attended to by health extension workers during their delivery (see Figure 4.11).

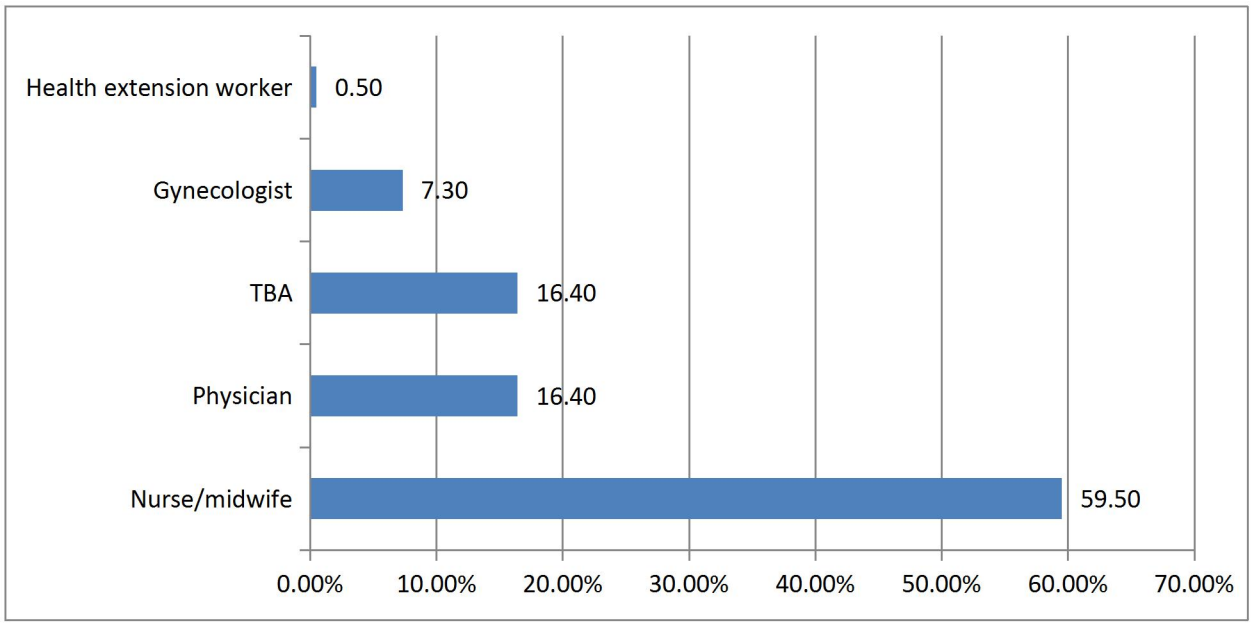

Figure 4.11:Respondents attended to by skilled health workers

4.3.3.6 PNC services utilization

Of the 422 respondents, 234 (55.45%) had PNC visits, while 185(44.4%) did not have any PNC visits. Only three (0.7%) of the women could not remember whether they had PNC visits or not. Figure 4.13 indicates the proportion of women who had PNC visits at a healthcare facility after delivery.

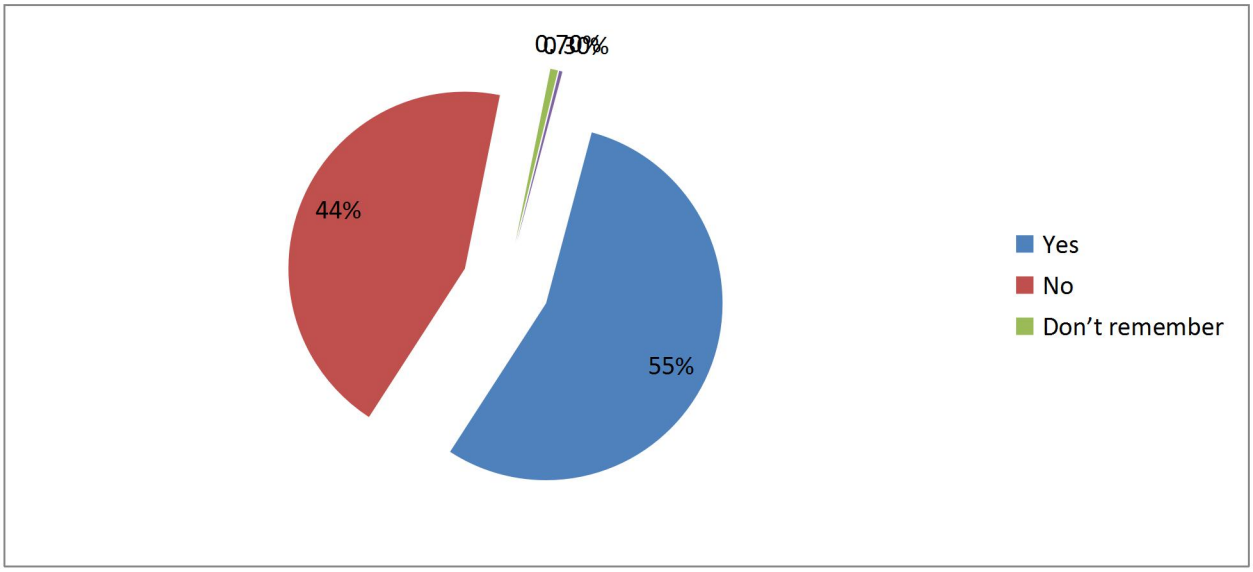

Figure 4.12: Proportion of women who had PNC services

(a) Barriers to PNC services in Awash Fentale woreda

It was indicated in this study that 135 (42.2%) of the women responded that they did not access PNC services because they did not experience any complications after delivery while they were at home. The second reason mentioned for not visiting the healthcare facility after delivery was because their family members did not allow them to visit a healthcare facility. Thirty-three (10.3%) of the respondents indicated their husbands' influence as a barrier. Long distance from the health care facility, not trusting the health care facilities, and the unavailability of quality services were among the major reasons mentioned by the study participants that prevented them from visiting a health care facility (see Table 4.21).

Table 4.21: Proportion of the responses regarding barriers to accessing PNC services

Reasons not to have PNC	Frequency	Percentage
High cost of service	10	3.1
Long distance	22	6.9
Long waiting time	13	4.1
No complication	135	42.2
Do not trust healthcare facility	22	6.9
Unavailability of quality service	22	6.9
Husband did not allow it	33	10.3
Family did not allow it	43	13.4
Previous bad experience at a healthcare facility	5	1.56
Little respect from healthcare workers	15	4.7
Total responses	**320**	**100.00**

4.3.3.7 Women's satisfaction with maternal health care services

Respondents who had either ANC, DC, or PNC visits were asked whether they had been satisfied with the care they received. Out of 385 women who responded to this question, 200 (52%) were satisfied with the care and attention they received from the healthcare provider, while 166 (43.1%) responded that they were not satisfied with the care and attention they received from the healthcare provider. Only 32 (8.3%) said that they did not remember. With regard to the attitude of health personnel, 153 (39.7%) of the respondents were satisfied with the attitude of the health personnel in providing maternal health care services, while 200 (52%) were not satisfied. Less than half

(n=170; 44%) of the respondents claimed that they were satisfied with the cleanliness of the healthcare facility, while more than half 200 (52%) answered that they were not satisfied with the cleanliness of the healthcare facility. The respondents were also asked about their satisfaction pertaining to the amount of privacy they had and the medication they received. Only 135 (35%) of the respondents were satisfied with the privacy they had and only 82 (21.3%) were satisfied with the medication they received.

Table 4.22: Maternal health care services satisfaction(N=385)

Satisfaction	Frequency			Percentage		
	Yes	No	Do not remember	Yes	No	Do not remember
The care and attention from staff	200	166	19	52	43.1	4.9
The attitude of healthcare personnel	153	200	32	39.7	52	8.3
The cleanliness of the healthcare facility	170	200	15	44.1	52	3.9
The amount of privacy	135	223	27	35	58	7
The medication provided	82	248	55	21.3	64.4	14.3

4.3.3.8 Other health-related issues

In this subsection, aspects including women's decision making, reading newspapers or magazines, and the frequency of listening to the radio or watching television are presented.

(a) Decision making

The study participants were asked about their decision-making process while seeking health care. The study found that 158 (37.4) of the women responded that they made decisions regarding seeking health care with their partner, while 141(33.4%) indicated that their husband or partner decided for them. Of the respondents, 72 (17%) decided alone regarding their health care and 38 (9%) decided along with another person. For only 13 (3.1%) of the participants, someone else decided for them.

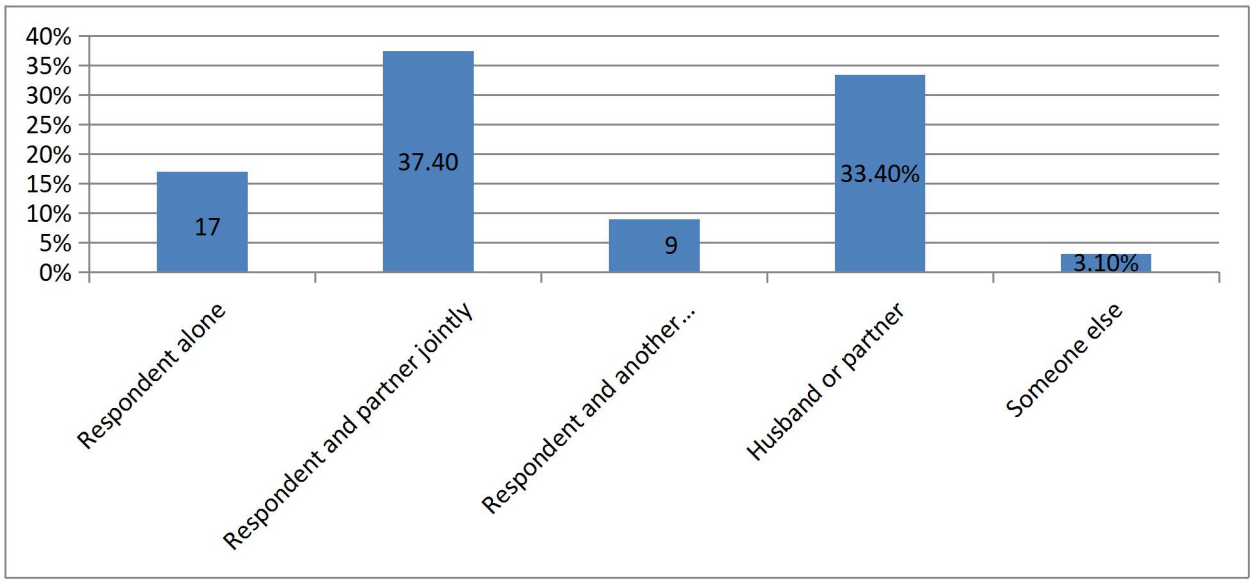

Figure 4.13: Proportion of respondents regarding their decision making

(b) Reading newspapers or magazines

Of the respondents, 328 (77.7%) reported that they did not read either newspapers or magazines at all, while 43 (10.2%) read newspapers or magazines less than once a week and 36 (8.5%) read newspapers at least once a week. Only 15 (3.6%) of the participants read either a newspaper or a magazine every day. See Figure 4.14.

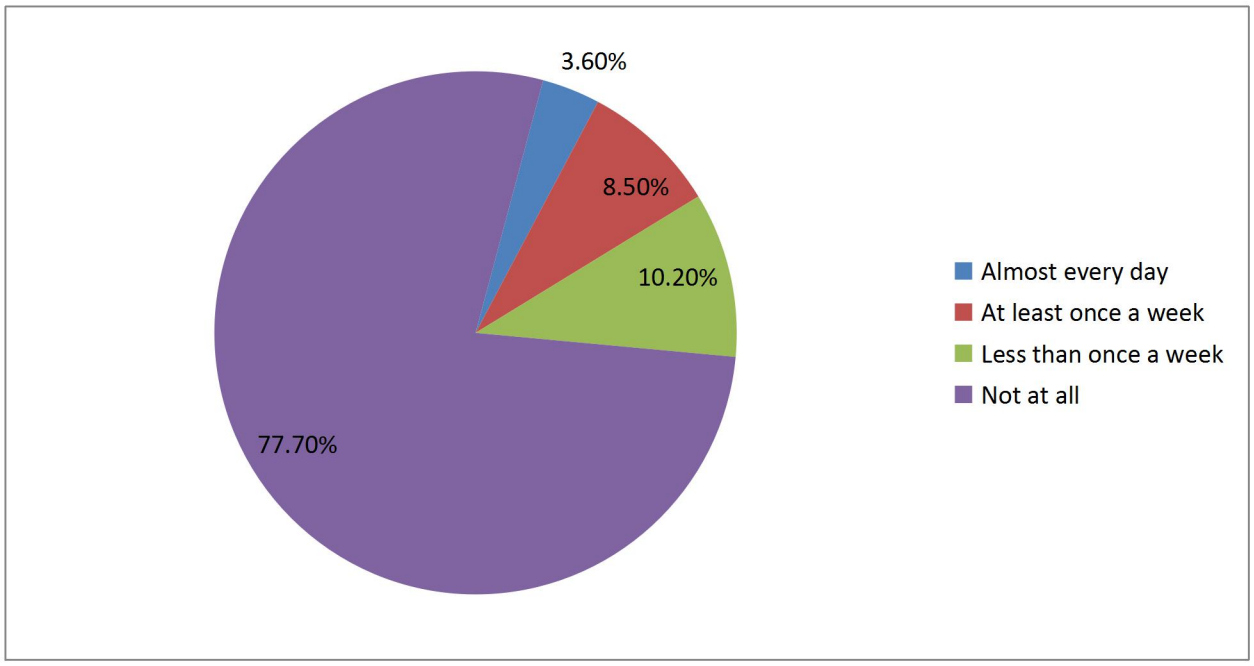

Figure 4.14: Frequency of reading newspapers or magazines

(c) Frequency of listening to the radio among the study respondents

More than half (n=250; 59.2%) of the participants reported that they never listened to the radio at all. Seventy-two (17%) respondents listened to the radio less than once a week and 53 (12.6%) listened to the radio at least once a week. Only 47(11%) participants listened to the radio almost every day.

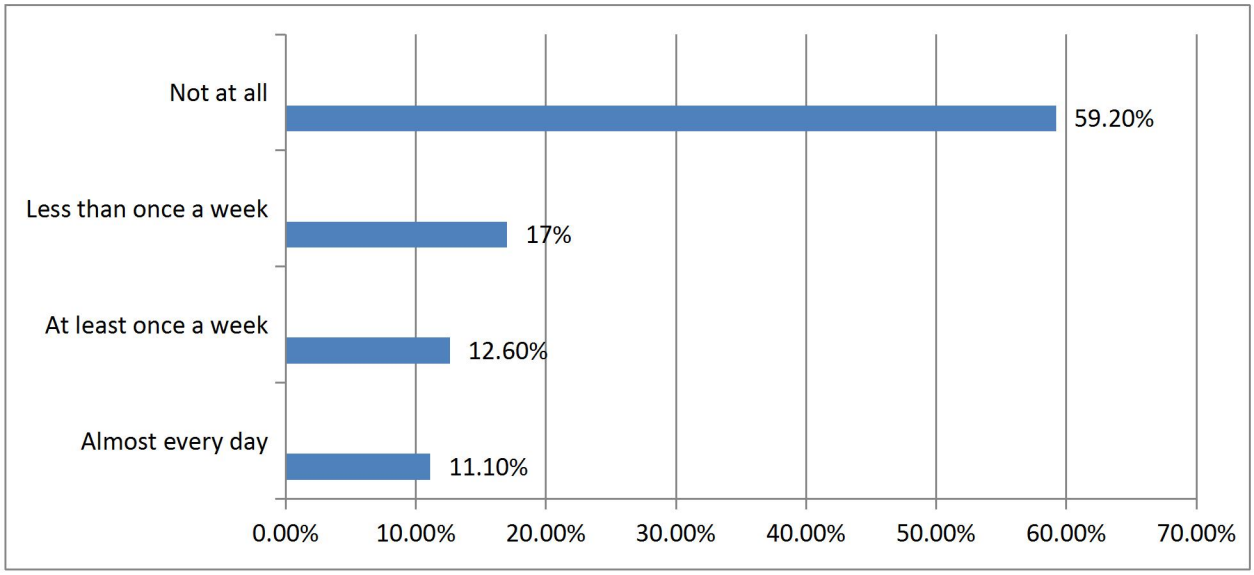

Figure 4.15: Frequency of listening to the radio

(d) Frequency of watching television

The study revealed that 266 (63%) of the participants watched television every day, while 95 (22.5%) did not watch television at all. Moreover, 35(8.3%) women watched television less than once a week and only 26 (6.2%) women watched television at least once a week (see Figure 4.16).

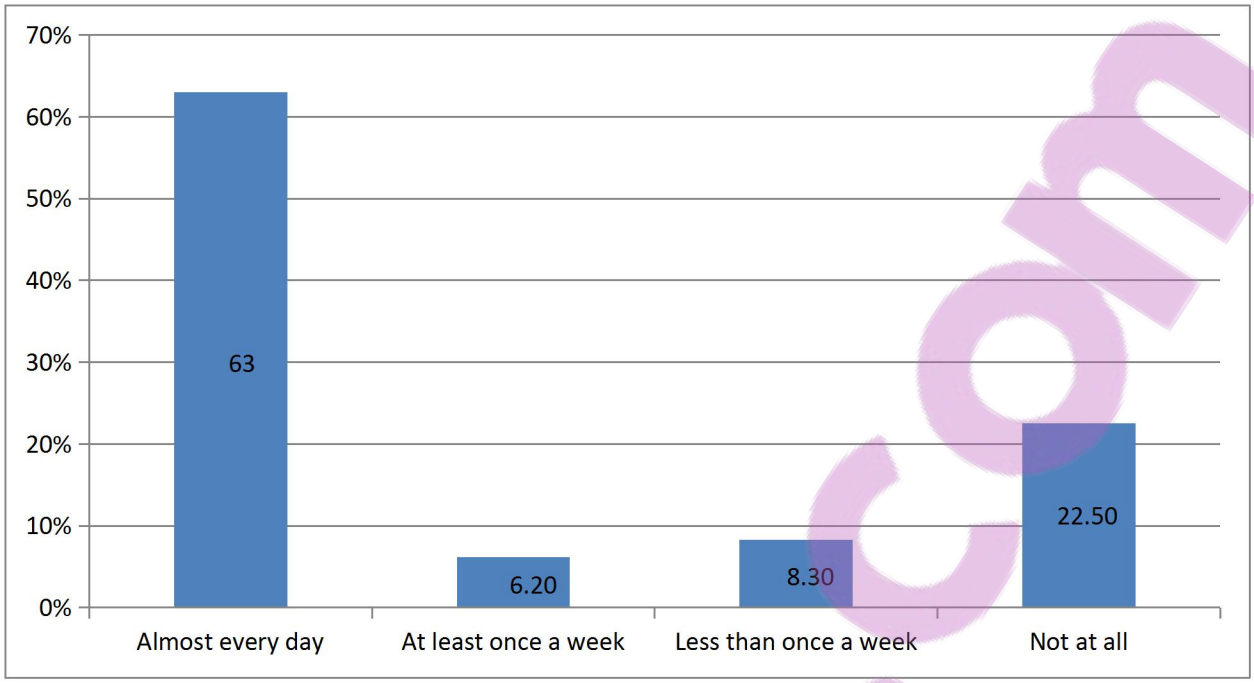

Figure 4.16: Frequency of watching television among the study participants

4.4 OVERVIEW OF THE RESEARCH FINDINGS

This research study found that the frequency of ANC visits was at least high for one ANC visit as compared to other research findings. The findings also demonstrated that perceived good quality of the service was the main reason to prefer a health care facility for its ANC services.

In this study, the major barriers to DC services utilization listed by the respondents were that their family did not allow them to give birth at a health care facility, not having complications during their previous pregnancy or delivery, distance to the health care facility from their home, and their husbands' influence. The women indicated that no complications experienced after birth, family and husbands' influence, long distance, and not trusting a health care facility were the main reasons that hindered them from making PNC visits.

Respondents who had either ANC, DC, or PNC visits were asked whether they were satisfied with the care they received. This study found that 52% of the respondents were satisfied with the care and attention they received from the health care provider, 39.7%

were satisfied with the attitude of the health care providers, and only 35% were satisfied with the privacy they had.

The findings from the binary logistic regression indicated that women who never attended school were less likely (82.5%) to have made ANC visits as compared to women who had attended school. The study has also indicated that factors such as watching television, reading newspapers, and owning a Bajaj were associated with the frequency of ANC visits (antenatal adequacy).

Not attending school and not watching television were also associated with maternal health care services utilization. Regardless of the level or degree of income, the husbands' income was statistically significant and earning less income among husbands might lead to women having less PNC services utilization. Another independent variable that showed statistical significance with PNC services utilization was not watching television. Women who never watched television were 58% less likely to use PNC services compared to those who watched television every day.

4.5 CONCLUSION

This chapter provided the analysis and presentation of the data for ANC, DC, and PNC services utilization. The presentation included an introduction, followed by descriptive and inferential statistical analysis. Tables and figures were used for the descriptive statistics. The inferential statistics were applied to draw conclusions regarding the strength of the association between the dependent and independent variables. The next chapter discusses the findings of the study in relation to the literature.

CHAPTER 5
DISCUSSION OF FINDINGS

5.1 INTRODUCTION

In this chapter, the findings that were analyzed and interpreted in Chapter 4 are discussed in detail and in accordance with the stated research questions. The research findings are also discussed in relation to previous local, regional, and global studies conducted on similar subjects.

5.2 SOCIO-DEMOGRAPHIC CHARACTERISTICS

5.2.1 Percentage and frequency distribution of the respondents' age, employment, ethnicity, and income by their level of education

This study found that 20% (n=7) of women aged 15 to 19 years had completed primary education. Similarly, this age group had the highest percentage of completing secondary education. On the other hand, more than 30% (n=50) of women with an age range of 25 to 29 years had completed tertiary education. Unemployment was the highest among uneducated women (57%; n=89) and the lowest among women who attained tertiary education (3.6%;n=4). A high illiteracy rate was observed among the Somali, Argoba, and Afar ethnic groups. Attainment of tertiary level education was the highest among the Welayta and Amhara ethnic groups. Women with a better income had better educational attainment compared to those with a lower income. A study conducted in Addis-Ababa illustrated that except for the completion of primary education, in all the other levels of education the proportion of women increased with the age of the women, while unemployment was the highest among women with a primary education and the lowest among women with a tertiary education (Tebekaw et al. 2015:78). With regard to ethnicity, the attainment of tertiary education was the highest among Tigray and Amhara women respectively, compared to other ethnic groups (Tebekaw et al. 2015:79).The differences may be attributed to the differences in the proportions of each ethnic group. For example, in this study, the proportion of Tigray women was much smaller compared to other ethnic groups.

5.2.2 Factors associated with ANC services utilization

In this study, the dependent variable (ANC visits) was dichotomized, with 1 being yes and 0 being no. The asterisks in Table 5.1 indicate statistical significance, referring to the differences between the categories of the independent variables. In the regression model, goodness-of-fit tests were conducted, namely the Hosmer-Lemeshow goodness-of-fit test, which was based on the chi-square test. In testing the fitness of the logistic model, if the Hosmer-Lemeshow goodness-of-fit was greater than 0.05, the model was considered a well-fitting model.

Table 5.1 indicates potential factors associated with ANC visits, taking into account the crude(unadjusted) and adjusted binary logistic regression. Logistic regression modeling helps to examine the net effects of independent variables over the dependent variables, and the ORs were adjusted for all other variables with 95% CIs.

Table 5.1: Factors associated with ANC visits: Binary logistic regression (OR 95% CI)

ANC visits			
Variable	**(COR)(95% CI)**	**(AOR) (95% CI)**	**P-value**
Current job (Employment)			
Not employed	1	1	
Governmental	2.59 (0.934-7.203)	2.5 (0.809-7.802)	
NGO	4.33 (1.44-13) * *	1.442(0.406-5.12)	
Self-employed	5.95 (1.0-34.4)**	3.04 (0.456-20.24)	
Ever attended school			
Yes	1	1	
No	0.18 (0.11-0.3)**	0.175(0.91-0.34)**	0.00**
Husbands' income			
≤1,500 ETB	0.26 (0.095-0.72)*	0.470 (0.155-1.427)	
1,501-5,001 ETB	0.485(0.183-1.28)	0.534 (0.193-1.479)	
≥5,001ETB	1	1	
Parity			
1-2	1	1	
3-4	2.46 (1.2-4.8)*	1.166 (0.519-2.620)	
>=5	1.639 (0.798-3.37)	0.993 (0.431-2.285)	

AOR = Adjusted odds ratio; COR = Crude odds ratio

5.2.2.1 Demographic factors and ANC visits

As indicated by Table 5.1, women who never attended school were 82.5% less likely to have ANC visits compared to women who attended school. Since the p-value after conducting multivariate analysis on binary logistic regression was <0.001, not ever attending school is statistically significant and strongly associated with ANC visits (AOR=0.175). Although the multivariate analysis showed no statistical association with employment, husbands' income, and parity, some of the components of these variables were associated with ANC visits in the bivariate analysis.

A study conducted in Tigray, however, revealed that illiterate women were less likely to utilize ANC services compared to those who had completed primary school, secondary school, and above (Aregay et al. 2014:121), with a p-value <0.05.

Although the multivariate analysis showed no statistical association with employment, husbands' income, and parity, some of the components of these variables were associated with ANC visits in the bivariate analysis. A similar study conducted in rural Kenya indicated that expectant women in households earning more than US$1 a day were four times more likely to make the recommended four ANC visits compared to those earning US$1 and less (Nzioki et al. 2017:24).Moreover, a study conducted in Kenya revealed that women who were employed, as well as women with small businesses, were 3.7 times more likely to seek ANC services as recommended compared to farm workers (Nzioki et al. 2017:24). Many studies conducted in various parts of the world also indicated that parity and husbands' income had a significant association with ANC visits

5.2.2.2 Factors associated with the adequacy of ANC visits

In this study, women who did not watch television were 53% less likely to have four and more ANC visits compared to those women who watched television every day. Tsawe et al. (2015:2) and Shahram et al. (2015:602) stated that exposure to media was among the various socio-demographic factors that influence and cause a difference in the utilization of maternal healthcare services. A study conducted in Afghanistan indicated

that women who had access to only television and those with access to both television and radio made more ANC care visits compared to those women who were not exposed to either (Shahram et al. 2015:604).

Table 5.2: Factors associated with the adequacy of ANC (adequate means ≥ 4ANCvisits): Binary logistic regression (OR 95% CI)

ANC visits			
Variable	**(COR)(95% CI)**	**(AOR) (95% CI)**	**P-value**
Ever attended school			
Yes	1	1	
No	0.459(0.282-0.746)*	0.591(0.335-1.04)	0.069
Husbands' income			
≤1,500 ETB	0.42(0.202-0.91)*	0.635 (0.270-1.493)	0.3
1,501-5,001ETB	0.76(0.402-1.43)	0.803 (0.4-1.61)	0.53
≤5,001ETB	1	1	
Listening to the radio			
Not at all	0.79 (0.403-1.54)	0.689 (0.314-1.496	
Less than once a week	1.42(0.64-3.1)	0.884(0.367-2.127)	
At least once a week	1.891(0.79-4.53)	1.57(0.584-4.225)	
Every day	1	1	
Watching television			
Not at all	0.289 (0.154-0.543)**	0.469(0.231-0.950) *	0.036
Less than once a week	1.134(0.516-2.49)	1.278(0.548-2.98)	0.57
At least once a week	1.092(0.428-2.78)	1.508(0.54-4.17)	0.43
Every day	1	1	
Reading newspapers			
Not at all	1	1	0.009*
Less than once a week	4.6 (1.006-21)*	8.8 (1.7-45.93)*	0.09
		4.5(0.79-25)	0.007*

At least once a week Every day	3.5 (0.68-18) 10 (1.87-53.4)**	11.918(1.92-71.83)***	
Owning a Bajaj No Yes	 0.451(0.277-0.735)* 1	 0.498(0.292-0.847) * 1	 0.01*

The findings of this study have also shown that women who read newspapers everyday are 11.92 times more likely to have adequate ANC visits than women who did not read newspapers at all, with an AOR of 11.918. There is no available research known to the researcher on whether reading newspapers had an association with the adequacy of ANC visits. Similarly, women who did not own a Bajaj were 50% less likely to indicate antenatal adequacy compared to those women who owned a Bajaj. Although there was no direct research finding dealing with Bajajs as a factor of ANC services utilization, a study conducted in Swaziland showed that maternal wealth was associated with ANC services utilization. Women from the rich quintile tended to use ANC services more compared to those from the poor quintile (Tsawe et al. 2015:4).

5.2.2.3 ANC services utilization in Awash Fentale woreda

(a) ANC visits

The coverage of ANC services utilization in terms of making at least one visit was relatively higher than the findings of the CSA (2014:42) but it is slightly lower than the findings of a Kenyan study (Nzioki et al. 2017:24). This study found that 45.6%of women made four or more ANC visits during their last pregnancy. This finding is much lower than the finding of the study conducted in Addis-Ababa (Tebekaw et al. 2015:84), which was 85.6%.This difference may be attributed to the difference in the type of healthcare facility. Women who live in Addis Ababa have better opportunities for obtaining and accessing quality services, which may encourage them to make more visits as compared to women who reside in Awash Fentale woreda.

(b) ANC visits versus age

Out of 422 respondents, nearly 31% of the respondents between the ages of 25 and 29 years made ANC visits, while 17.1% between the ages of 20 and 24 and 30 and 34 years had equal proportions of ANC visits. Women between the ages of 40 and 44 years had the lowest proportion of ANC visits. Research conducted in Ethiopia indicated that the utilization of ANC services was found to be lower for older women than for younger women (Mehari & Wencheko 2013:18).

Table 5.3: Frequency and percentage distribution of age of women versus ANC visits

ANC visit					
Age	**Yes**		**No**		**Total**
	Frequency	**Percentage**	**Frequency**	**Percentage**	
15-19	30	7.1	5	1.2	35
20-24	72	17.1	16	3.8	88
25-29	130	30.8	38	9	168
30-34	72	17.1	13	3.08	85
35-39	30	7.1	8	1.9	38
40-44	6	1.4	2	0.47	8
Total	**340**	**80.56**	**82**	**19.43**	**422**

(c) ANC visits versus the educational status of the respondents

Of the participants, 13.5% with no education and 34.6% with primary education made ANC visits during their time of pregnancy. A study conducted in Tigray revealed that 23.5% of women with no education, 11.1% with primary education, and 25% with secondary education made ANC visits during their time of pregnancy (Aregay et al. 2014:121). A study conducted in rural Ethiopia revealed that nearly 43% of women with primary or higher education used ANC services; while only some women with no education used the service (Mehari & Wencheko 2013:18). The rate of ANC services utilization is also higher in Swaziland among women with a secondary education, followed by those with a higher education (Tsawe et al. 2015:5). As indicated by Table 5.4, the proportion of women who had ANC visits decreased with increased levels of education. This happens because the number of respondents participating in the study remarkably decreased with increasing levels of education.

Table5.4: Frequency and percentage distribution of the educational status of the respondents versus ANC visits

ANC visits					
Educational level	**Yes**		**No**		**Total**
	Frequency	**Percentage**	**Frequency**	**Percentage**	
No education	99	23.4	57	13.5	156
Primary education	47	11.1	1	13.7	48
Secondary education	106	25	9	2.1	115
Tertiary education	88	20.8	15	3.55	103
Total	**340**	**80.56**	**82**	**19.43**	**422**

(d) ANC visits vs the employment status of the respondents

In this study,163 (38.6%) of the respondents who made ANC visits were unemployed, while 99 (23.5%) were government employees, 52 (12.3%) were self-employed, 17(4%) were private employees, and only nine (2.1%) were NGO employees. The utilization of ANC services is higher among employed women than unemployed women (Mehari &Wencheko 2013:19). If the percentages of employed women are added, the current findings are almost consistent with the findings by other research studies.

Table5.5: Frequency and percentage distribution of the employment status of the respondents versus ANC visits

ANC visits					
Employment status	**Yes**		**No**		**Total**
	Frequency	**Percentage**	**Frequency**	**Percentage**	
Not employed	163	38.6	44	10.4	207
Government employee	99	23.5	16	3.8	115
NGO employee	9	2.1	0	0	9
Private employee	17	4	2	0.5	19
Self-employed	52	12.3	20	4.7	72
Total	**340**	**80.56**	**82**	**19.43**	**422**

(e) ANC visits versus the ethnicity of the respondents

The findings in Table 5.6 indicate that 172 (40.7%) of women of Afar ethnicity had at least one ANC visit and 84 (20%) of women of Amhara ethnicity had at least one ANC visit. Thirty-four (8%) of the women who made ANC visits were women of Oromo

ethnicity. Since there is no recent literature on the ethnicity of women in Awash Fentale woreda, the researcher could not compare the current findings based on past studies.

Table 5.6:ANC visits versus the ethnicity of the respondents

ANC visits					
Ethnicity	**Yes**		**No**		**Total**
	Frequency	**Percentage**	**Frequency**	**Percentage**	
Afar	172	40.7	46	10.9	218
Amhara	84	20	12	2.8	96
Oromo	34	8.05	10	2.36	44
Welayta	23	5.4	7	1.6	30
Argoba	13	3.08	6	1.4	19
Somali	6	1.4	1	0.2	7
Tigray	8	1.9	0	0	8
Total	**340**	**80.56**	**82**	**19.43**	**422**

(f) ANC visits vs exposure to media

The findings of this research showed that 228 (54%) women watching television almost every day had at least one ANC visit, while 67 (15.9%) women who did not watch television at all had no ANC visits. On the contrary, 193 (46%) of the women who did not listen to the radio at all had at least one ANC visit. Similarly, 254 (60%) of the women who did not read either newspapers or magazines had at least one ANC visit. A study conducted in Afghanistan indicated that women who had access to only television and those with access to both television and radio made more ANC visits compared to women who were not exposed (Shahram et al. 2015:604). Since many of the women in Awash Fentale woreda did not possess a radio and were not exposed to newspapers and magazines, it is difficult to link listening to the radio and reading newspapers with ANC visits.

Table 5.7:ANC visits versus exposure to media

ANC visits					
Watching television	**Yes**		**No**		**Total**
	Frequency	**Percentage**	**Frequency**	**Percentage**	
Almost everyday	228	54	38	9	266
At least once a week	20	4.7	6	1.4	26
Less than once a week	25	6	10	2.4	35
Not at all	67	15.9	28	6.6	95

Listening to the radio					
Almost everyday	41	9.7	6	1.4	47
At least once a week	44	10.4	9	2.1	53
Less than once a week	64	15.2	8	1.9	72
Not at all	193	46	57	13.5	250
Reading newspapersor magazines					
Almost everyday	14	3.3	1	0.2	15
At least once a week	31	7.3	5	1.2	36
Less than once a week	41	9.7	2	0.5	43
Not at all	254	60	74	17.5	328

(g) ANC visits versus knowledge of danger signs of pregnancy

This study found that 123 (29%) of the respondents who had knowledge of the danger signs of pregnancy had at least one ANC visit, while 169 (40%) of the respondents who did not have knowledge of danger signs of pregnancy had ANC visits. A study conducted in Tigray showed that two-thirds (66.3%) of women who had ANC visits had knowledge about danger signs that could occur during pregnancy (Aregay et al. 2014:120).

Table 5.8:ANC visits versus knowledge of dangers signs of pregnancy

ANC visits					
Knowledge of danger signs	**Yes**		**No**		**Total**
	Frequency	**Percentage**	**Frequency**	**Percentage**	
Know	123	29	2	0.5	125
Do not know	169	40	2	0.5	171
Do not remember	47	11.1	0	0	47

(h) Reasons for choosing healthcare facilities for ANC services

Only 48% of the respondents preferred a healthcare facility for their ANC services because of the perceived good quality of service. A similar study conducted in Adwa illustrated that perceived more respectful care was the main reason for choosing a healthcare facility for ANC services (Jackson et al. 2016:8).

(i) Components of previous obstetrical histories for respondents who had ANC visits

- Previous obstetrical histories

In this study, the respondents were asked about their previous obstetrical history. It was found that 18% of the respondents had a previous history of still births and 12.3% of the women had been asked by the healthcare provider about the death of an infant. Regarding their history of heavy bleeding, 33.2% of the women responded that they were asked about the presence of bleeding during previous ANC visits. Regarding these findings, there is no available research known to the researcher on histories asked by healthcare workers to those women who had ANC visits.

- Awareness of danger signs

To assess the level of awareness of the danger signs of pregnancy, the participants were asked to mention some of the danger signs. The findings of this study revealed that the proportion of women who mentioned fever, vaginal bleeding, abdominal pain, and swelling of hands and faces as danger signs of pregnancy were relatively higher compared to other research findings (Tebekaw et al. 2015:81).However, the proportion of women who mentioned severe headache, blurred vision, breathlessness, and reduced body movement as danger signs were almost similar to Tebekaw et al.'s (2015:82) findings. Of the respondents, 73.5% were counseled to give birth at a healthcare facility and more than 65% of them were advised about the danger signs of pregnancy. The findings of a research study conducted in Fogera District, Ethiopia, showed that 63.7% of the respondents received information from healthcare providers regarding the need to deliver at a healthcare facility (Desalegn, Mekonin & Abeje 2013:4). Regarding the danger signs of pregnancy, a study conducted in Arbaminch, Ethiopia, revealed that 71.1% of pregnant women receiving ANC services were advised of the danger signs and complications of pregnancy (Gebremeskel et al. 2015:4).

In this study, more than 50% of the study participants were able to identify fever and severe headache as common danger signs of pregnancy. Similarly, more than 69% of them were able to identify vaginal bleeding and PPH as common danger signs and

complications of pregnancy. A similar study conducted in Enderta woreda, Ethiopia, indicated that nearly 37% of women receiving ANC were aware of headaches and 47.7% were able to identify vaginal bleeding as a common danger sign of pregnancy (Aregay et al. 2014:120-121). In this study, only 29% of the respondents who had knowledge of the danger signs had made at least one ANC visit, whereas a study conducted in Tigray indicated that 66.3% of women who had knowledge of the danger signs of pregnancy were able to have at least one ANC visit (Aregay et al. 2014:121). In this study, the percentage of respondents who had no knowledge of the overall danger signs but who had ANC visits was 40%. There was, however, no statistical associations between ANC visits and knowledge of danger signs of pregnancy.

- Tetanus toxoid

The research results showed that 72% of the women who participated in this study had received tetanus toxoid injections during their ANC visits to prevent neonatal tetanus. This finding was higher than the findings of the EDHS (2016:23) study, which was 49%. A similar study conducted in Adwa revealed that 94% of women had received at least one dose of tetanus toxoid during their pregnancy (Jackson et al. 2015:5). A similar study conducted in Assosa, Ethiopia, revealed that 89.5% of women who received ANC had received tetanus toxoid vaccinations (Amentie, Abera & Abdulahi 2015:5).

- Anti-malaria treatment

Since Awash Fentale woreda is a malaria-endemic area, women should be aware of the danger signs of malaria and healthcare providers should have the knowledge and skills to treat women with uncomplicated malaria. In the study area, only 21(5%) of the 345 respondents who had ANC visits received anti-malaria drugs during their ANC visits. In most settings of African countries, coverage of intermittent preventive treatment in pregnancy for malaria is 10%, which is twice as low compared to most settings of African countries (Lincetto et al. 2016:57).

- Advice on breast feeding

In this study, only 36.7% of the women who had ANC visits reported that they were advised about the benefits of breast feeding. A similar study conducted in Debre Markos

indicated that 47.9% of the women who had ANC visits were counseled about breast feeding (Mekuria & Edris 2015:3). This is slightly higher than the current finding.

- Family planning

The WHO (2018:1) recommended that ANC is an ideal platform for family planning education and counseling because ANC clients interact with health care providers on a regular basis throughout the pregnancy and can prepare to initiate family planning methods after birth. In this study, nearly 36% (151) of the women claimed that they were advised about the benefits of family planning during their ANC visits.

This finding is consistent with research findings of a Tanzanian study (Lilungulu, Matevolo & Gesase 2016:5) where 35.2% of pregnant women receiving ANC were advised about the benefits of contraceptives. However, a study conducted in Adama Hospital, Ethiopia (Nigusu, Wondafrash, Segni & Gurmessa 2014:4), revealed that 79.5% of pregnant women were advised about the benefits of family planning. This finding is much higher than the finding of this study.

5.3 DELIVERY SERVICES UTILIZATION

In this study, out of 422 participants, 19% of the women gave birth at home and the remaining 342 (81%) delivered at a health care facility. The EDHS (2016:24) indicated that 80% of births to urban mothers were assisted by a skilled provider and 79% were delivered in a healthcare facility, as compared with 21% and 20% respectively of births to rural women.

The proportion of births delivered in a health care facility ranges from 10% in Afar to 87% in Addis Ababa (CSA 2014:47). Since the majority of residents of Awash Fentale woreda are urban dwellers and have access to healthcare facilities, this might have escalated the proportion of births delivered at health care facilities, although the Afar Region in general has the lowest institutional delivery compared to the national delivery service coverage.

5.3.1 Barriers to DC services

Those respondents who gave birth at home were asked about the reasons that hindered them from delivering at a health care facility.

In this research study, the major barriers listed by the respondents were that their family did not allow them to give birth at a health care facility, not having complications during their last pregnancy or delivery, distance of the healthcare facility from their home, and their husbands' influence. Research findings from Adwa showed that the key barriers for women to not access ANC and institutional delivery services were the absence of husbands for many months in the year, distance, and lack of transportation due to geographical factors (Jackson et al.2016:12). Most of the findings of this study do not coincide with the available literature. This may be because Ethiopia is a culturally diversified country, which implies that the barriers mentioned in Awash Fentale woreda may not be applicable to others parts of the country. Previous studies have indicated that cultural beliefs about maternal health and illness can prevent women from utilizing modern maternal healthcare services (USAID 2012:5). On the other hand, failure to consider social and cultural factors in health care decision making may also explain poor utilization of existing services (Chomat et al. 2014:117).

5.3.2 Responses of health care providers regarding the barriers for access to maternal health care services in Awash Fentale woreda

To understand the responses of health care workers regarding the reasons why women in Awash Fentale woreda do not use health care facilities to access maternal healthcare services, 25 healthcare workers who provide maternal health care services were interviewed using a structured questionnaire. Hence, no previous complications experienced, long distance, long waiting time, family not allowing it, not trusting the health care facility, husbands' influence, little respect from health care workers, lack of privacy, and fear of operation were among the reasons given by the health care workers who are engaged in providing maternal health care services. In addition to barriers such as distance, long waiting time, and husbands' influence, disrespect and mistreatment by healthcare workers and health care facilities were mentioned as additional barriers for women, among other challenges (Jackson et al.2016:12). Although the reasons why

women in Awash Fentale woreda were prohibited by their family to visit healthcare facilities were not explained clearly, research findings from western Nepal revealed that some families did not allow women to deliver at a healthcare facility because they feared an evil spirit might haunt the mother and baby (Choulagaiet al. 2014:5).

5.3.3 SBAs

The findings of this study indicated that the majority (n=251; 59.5%) of the participants were attended to by clinical nurses or midwives and more than 69 (16%)of the participants were attended by physicians and TBA respectively, while 31 (7.3%) of the participants were attended to by either a gynecologist or an obstetrician and the remaining two (0.5%) participants were attended to by health extension workers during their delivery.

Findings from the WHO (2015a) indicated that coverage of SBAs during child birth increased from 62% in 2000 to 73% in 2013. However, although such improvements have been registered globally and within regions, millions of births were not assisted by a midwife, a doctor, or a trained nurse (WHO 2015a:83).The massive introduction and escalated number of health extension workers in Ethiopia might have enabled high services utilization, in which more than 38,000 health extension workers have been trained and deployed in agrarian, pastoralist, and urban areas in more than 16,000 kebeles, which improves the utilization of healthcare services by linking community and health care facilities, particularly health care centers (Tadele & Lamaro 2017:6).

Regarding the mode of delivery, in this research study 371 (87.9%) of the respondents had spontaneous vaginal delivery and 51(12%) had caesarian sections. A study conducted in India indicated that the majority (69%) of women preferred the vaginal mode of delivery because they believed that it enhanced the affectionate relationship between mother and baby(Varghese et al. 2016:4). A similar study conducted in Ethiopia also revealed that 2% of births were delivered by caesarean section. All these caesarian sections were carried out in a healthcare facility. Caesarian sections were

most likely to take place in urban areas, among highly educated mothers, and in the wealthiest quintiles (CSA 2014:50). The attitude of the majority of women indicated that vaginal delivery is a natural mode of birth (89%), health recovery is fast (80%), and involves less risk (67%). The attitude towards cesarean sections has also showed that this mode of delivery is associated with more complications (72%)(Varghese et al. 2016:2).

5.3.4 Time spent to reach health care facilities

In this study, more than half (n=239; 56.6%) of the women responded that it took them less than an hour to reach a health care facility, while 131(31%) stated that it took them one hour and more. The remaining 52 (12.3%) respondents could not estimate the time spent to reach a health care facility. Research findings from Tigray showed that it took 82% of the women less than two hours to reach the healthcare facility, while for only 18% of respondents it took more than two hours (Aregay et al. 2014:119). This discrepancy may be due to the time reference (benchmark) taken for both studies being different. However, had “less than two hours” been taken as a benchmark, the findings of this study might have reached greater than 85%. Hence, this finding is almost consistent with the findings in Tigray.

5.3.5 Factors associated with DC services

Prior to the multivariate analysis, those variables that were thought to affect delivery services were checked on binary logistic regression using bivariate analysis. On the bivariate analysis, the independent variables, including time spent to reach the healthcare facility, husbands’ income, owning a Bajaj, ever attending school, watching television, and adequacy of ANC visits were statistically significant. These independent variables were again tested together using multivariate analysis to avoid the effects of confounding factors.

Table 5.9: Factors associated with DC services: Binary logistic regression(OR 95% CI)

DC services			
Variable	**(COR)(95% CI)**	**(AOR) (95% CI)**	**P-value**
Time taking to go to healthcare facility			
<1hr	1	1	
>1hr	0.373 (0.204-0.683)*	0.615(0.282-1.34)	0.223
Ever attending school			
Yes	1	1	0.00**
No	0.159 (0.092-0.274) **	0.214(0.92-0.495)**	
Husbands' income			
≤1,500 ETB	0.208 (0.076-0.571)*	0.625(0.117-3.33)	0.58
1,501-5001ETB	0.572(0.215-1.52)	0.535(0.116-2.48)	0.42
≥5,001ETB	1	1	
Owning a Bajaj			
No	0.440(0.223-0.868)*	0.146 (0.57-3.7)	0.42
Yes	1	1	
Watching television	0.131(0.073-0.234)*	0.405(0.167-0.98)*	0.046*
Not at all	0.248(0.12-0.577)**	0.229(0.072-0.72)	0.12
Less than once a week	0.417(0.144-1.2)	0.664(0.123-0.572)	0.56
Once a week	1	1	
Every day			
Adequacy of ANC visits			
Adequate	1	1	
Not adequate	0.357(0.182-0.697)*	0.634(0.28-1.4)	0.27

In this study, women who did not attend school were 80% less likely to use delivery services compared to those who attended school, with an AOR of 0.214. Since the p-value for this variable is less than 0.001, it is highly significant. Moreover, not attending school is strongly associated with delivery services. As indicated in many research studies, because women's education is a strong predictor of the place of delivery, women with no education are less likely to deliver in health care institutions than literates (Fikre & Demissie 2012:5; Ayele et al. 2014:6).

Another variable that showed an association with maternal delivery services was not watching television. Hence, women who did not watch television at all were 59.5% less likely to use delivery services compared to those women who watched television every day. A study conducted in Afghanistan indicated that women who had access to only television and those with access to both television and radio made more ANC visits compared to women who were not exposed to these media (Shahram et al. 2015:604). This study also revealed that media exposure was strongly associated with SBA utilization. A study conducted in Ahferom woreda, Tigray, also showed that the probability of choosing healthcare institutions increased by 3.6 times among women who received health information about the benefits of institutional deliveries than those who did not receive the information (Weldearegay 2015:5).

5.4 PNC SERVICES UTILIZATION

The postnatal period is a critical period in the lives of mothers and newborn babies. Major changes occur during this period that determine the health of mothers and newborns. Since this is the most neglected time for the provision of quality services, lack of proper care during this period could result in significant ill health and even death (WHO 2013b:6).

In this study,234 (55.45%) of the women had PNC visits, while 185 (44.4%) did not have any PNC visits. This finding is almost consistent with the PNC coverage for Addis-Ababa. According to the EDHS (2016:34), the percentage of women who had a postnatal check-up in the first two days after birth in Addis Ababa was 55.4%.

5.4.1 Barriers to accessing PNC services in Awash Fentale woreda

The respondents who did not have any PNC visits after childbirth were asked about the barriers to accessing PNC services. It was found that women who had no complications after birth (42.2%), family and husbands' influence (13.3% and 10.3% respectively), long distance (6.9%), and not trusting health care facilities (6.9%) were the main reasons that hindered them from having PNC visits. A similar study conducted in south east Nigeria showed that lack of knowledge (42.2%), distance from a health care facility (36.4%), and a feeling that PNC was not necessary (21.1%) were the major barriers why mothers failed to utilize PNC services (Ugboaja, Berthrand, Igwegbe & Obi-Nwosu 2013:4). Although there were differences in terminology usage in both studies, there was consistency in some of the findings that have similar meanings. For example, in this study the term "no complications experienced" was used instead of "lack of knowledge" but the findings are almost the same. A study conducted in Nepal revealed that postnatal confinement is commonly practiced in most of the villages in Nepal. Confinement is about keeping a mother and baby at home for a certain number of days or weeks. The tradition arose from the need to protect the newborn baby and mother from infection and to help the mother recover from the exhaustion of child birth (Lama & Aki 2014:256).

5.4.2 Factors associated with PNC visits

On the bivariate analysis, the independent variables that showed associations with PNC services, including place of delivery, husbands' income, reading newspapers, ever attending school, watching television, and the adequacy of ANC visits, were statistically significant. These independent variables were again tested together using multivariate analysis to avoid the effects of confounding factors.

Before the multivariate analysis was conducted, those variables that were thought to affect PNC services were checked on binary logistic regression using bivariate analysis.

Table 5.10:Factors associated with PNC visits

PNC visits			
Variable	**(COR)(95% CI)**	**(AOR) (95% CI)**	**P-value**
Place of delivery			
Home	0.27(0.16-0.46)**	0.615(0.306-1.235)	0.17
Healthcare facility	1	1	
Ever attending school			
Yes	1	1	
No	0.533(0.358-0.796)*	1.316(0.736-2.353)	0.354
Husbands' income			
≤1,500 ETB	0.208 (0.076-0.571)*	0.625(0.117-3.33)	0.58
1,501-5,001ETB	0.572(0.215-1.52)	0.535(0.116-2.48)	0.42
≥5,001 ETB	1	1	
Reading newspapers			
Not at all	2.45(0.82-7.334)	2.163(0.625-7.48)	0.22
Less than once a week	2.778 (0.81-9.529)	1.907 (0.485-7.506)	0.356
Once a week	4.54 (1.256-16.456)*	4.311 (0.947-19.031)	0.059
Every day	1	1	
Watching television			
Not at all	0.276(0.168-0.453) *	0.414(0.216-0.795)**	0.008
Less than once a week	0.401(0.196-0.821)*	0.413(0.177-0.963)*	0.041*
Once a week	0.729(0.322-1.653)	1.139(0.404-3.2111)	0.805
Every day	1	1	
Adequacy of ANC visits			
Adequate	1	1	
Not adequate	0.569 (0.366-0.88)	0.766 (0.47-1.247)	0.172

The findings of this research study revealed that women whose husbands had an income of≤1,500 ETB were 81.4% less likely to use PNC services compared to women whose husbands' income was above 5,001 ETB, with an AOR of 0.186 and p-value of 0.001. A similar statistical association was also seen among women whose husbands' income was 1,501-5,001 ETB, with an AOR of 0.383 and p-value of 0.024, which is less than the cut-off point of p=0.05. Therefore, regardless of the level or degree of income, husbands' income was statistically significant and earning less income among husbands might lead women to have less PNC services utilization.

Although there is no sufficient literature available that deals with husbands' income as a factor that influences PNC services, a study conducted in Swaziland revealed that women in the rich quintile used PNC services more compared to those in the middle wealth quintile (Tsawe et al. 2015:7). A similar research finding in Kenya showed that women from households earning more than US$1 a day were six times more likely to seek PNC services within two days after delivery compared to those women from households earning US$1 and less (Nzioki et al. 2015:25).

Another independent variable that showed statistical significance was watching television. Women who never watched television were 58% less likely to use PNC services compared to women who watched television every day (AOR=0.414 and p-value=0.008), which is less than p=0.05. Women who watched television less than once a week were also 58.7% less likely to use PNC services compared to those women who watched television every day (AOR=0.0413 and p-value=0.041). Therefore, not watching television at all and watching television less than once a week were statistically associated with PNC services utilization. However, a study conducted in Tigray suggested that women who received information about PNC services from health extension workers and a midwife/nurse were 24.87 and 37 times more likely to utilize PNC services respectively compared to women who obtained information from other sources (Aregay et al. 2014:121).Since obtaining information from healthcare workers was not considered as a factor of PNC services utilization in this study, it would be difficult to compare and contrast with the current findings. Despite the fact that the study conducted in Afghanistan excluded PNC, the findings revealed that media exposure

(watching television) was strongly associated with both ANC and SBA utilization (Shahram et al. 2015:604).

5.5 WOMEN'S SATISFACTION WITH MATERNAL HEALTH CARE SERVICES

Client satisfaction is considered one of the desired outcomes of health care and it is directly related with the utilization of health care services, as it reflects the gap between the expected and the actual experience of the service from the client's point of view (Timane, Oche, Umer, Constane & Raji 2017:14).

Women who had either ANC, DC, or PNC visits were asked whether they were satisfied with the care they had received. In this study, 200 (52%) of the respondents were satisfied with the care and attention they received from the health care provider. A similar study conducted in Gamo Gofa Zone showed that 76% of the women were satisfied with the care they received from the health care provider (Tesfaye et al. 2016:6).The reason for this higher degree of satisfaction was thought to be the proximity of the health care facility to the women seeking maternal health care. The finding of this study is much lower than the findings in the literature. Long distance and long waiting time were identified as barriers for maternal healthcare services utilization by healthcare workers in Awash Fentale woreda, which may underestimate the overall satisfaction.

Another reason may be because Awash Fentale woreda is located in a pastoralist region, therefore the possibility of accessing skilled labor to give appropriate care is difficult. The healthcare institutions might therefore sometimes be forced to provide the services with under qualified healthcare workers.

Regarding the attitude of health care personnel, 153 (39.7%) of the respondents were satisfied with the attitude of the health care personnel in providing maternal healthcare services. A study conducted in Debre Markos showed that only 33.5% of women were satisfied with the care provided. The most frequently cited reason for dissatisfaction was health care worker-related attitudes, followed by lack of knowledge (Limenih et al. 2016:6).

Less than half (n=170; 44%) of the participants claimed that they were satisfied with the cleanliness of the health care facility. A study conducted in Nigeria indicated that 82.5% of women were satisfied with the cleanliness of the health care facility (Timane et al. 2017:14). In this study, the percentage of satisfaction with regard to cleanliness was very low as compared to the literature. The variation may be because of a real difference in the type of health care facility or differences in the expectations of women.

The participants were also asked about their satisfaction pertaining to the amount of privacy they had and the medication they were provided. Only 135 (35%) of the respondents were satisfied with privacy they had. A study conducted in Debre Markos indicated that approximately 98% of the participants were satisfied with the assurance of privacy (Bitew et al. 2015:3).The difference might be attributed to the fact that the study in Debre Markos was conducted in a referral teaching hospital where there were a relatively sufficient number of health care professionals and better diagnosis facilities.

In this study, only 82 (21.3%) of the women were satisfied with the medication they were provided. A study conducted in Debre Markos revealed that 73% and 57% of the respondents were satisfied with the explanation of healthcare providers about the drugs prescribed and their side effects respectively (Bitew et al. 2015:3). A similar study conducted in Assela Hospital in Ethiopia indicated that 87.4% of the mothers were satisfied with the ordered drugs and medical supplies (Amdemichael et al. 2013:4).

The findings of this study has a remarkable difference compared to the two above mentioned studies. The differences may be attributed to the type of health care facility that was selected during the study. Unlike in Assela and Debre Markos, the majority of the study participants in Awash Fentale woreda received maternal health care services in health care centers. Hence, this difference might influence the level of satisfaction of the participants.

5.6 OTHER HEALTH-RELATED ISSUES

5.6.1 Decision making

In this study,158 (37.4%) women responded that they made decisions regarding seeking healthcare with their partner, while 141 (33.4%) said that their husband or partner decided for them. Seventy-two (17%) respondents decided alone regarding their health care and 38 (9%) decided along with another person. Only 13 (3.1%) of the participants indicated that someone else decided for them. A similar study conducted in Doddota, Ethiopia, indicated that the final decision regarding women seeking health care for maternal health problems that fell under the domain of women was only 9.5%. Forty-eight percent of the decisions regarding women's healthcare seeking were made by their husband or other people (Fikre & Demissie 2012:4). A study conducted in Debre Markos suggested that 74% of women can make decisions by themselves while the rest needed to get the decision either from their husbands or their relatives (Bayu et al. 2015:4). Since Ethiopia is a socially and culturally diversified country, the differences of the studies may be attributed to the difference in the social and cultural aspects of the Ethiopian society. Social and cultural norms may affect women's decision making regarding their health care-seeking aspects.

5.6.2 Reading newspapers or magazines

Nearly 78% of the participants reported that they did not read either newspapers or magazines at all, while 43 (10.2%) of them read newspapers or magazines less than once a week and 36 (8.5%) read newspapers at least once a week. Only 15(3.6%) participants read either newspapers or magazines every day. In Swaziland, a study showed that 89.2% of the women who read either newspapers or magazines delivered at a healthcare facility. The gap in educational status and the extent of media exposure might have contributed to big discrepancies among the two studies. The EDHS (2016:12) report showed that approximately 48% of Ethiopian women have no education (they can neither read nor write). In addition to high illiteracy rate (37% of women in this study were unable to read and write), women living in the Somali and Afar regions have challenges in accessing magazines and newspapers due to cultural, social, and climatic problems.

5.6.3 The participants' frequency of listening to the radio

More than half (n=250; 59.2%) of the participants reported that they never listened to the radio. Seventy-two (17%) women listened to the radio less than once a week and 53 (12.6%) respondents indicated that they listened to the radio at least once a week.

Only 47(11%) participants listened to the radio almost every day. A study finding in Swaziland indicated that 77.2% of women who gave birth at a health care facility listened to the radio almost every day (Tsawe et al. 2015:9). Therefore, compared to the research finding in Swaziland, the finding of this study is remarkably low. This may be attributed to the differences in media exposure of the two studies. A similar study conducted in Afghanistan revealed that nearly 50% of women never listened to the radio (Shahram et al.2015:599). However, the study conducted in Afghanistan did not verify the frequency of listening to the radio on a daily or weekly basis. Moreover, the researcher could not obtain sufficient literature on the frequency of listening to the radio.

5.6.4 The participants' frequency of watching television

In this study, 266 (63%) of the participants watched television every day, while 95 (22.5%) of them did not watch television at all. Moreover, 35 (8.3%) of the participants watched television less than once a week and only 26 (6.2%) watched television at least once a week. Although the study had a limitation in terms of verifying the frequency of watching television, a study conducted in Afghanistan indicated that the proportion of women who watched television was 64.25%. The finding of this study, which is stated as "watching television everyday", is almost consistent with the finding in the literature. However, a study in Swaziland illustrated that 90% of mothers who gave birth at a healthcare institution watched television almost every day (Tsawe et al. 2015:8).

5.7 CONCLUSION

In this chapter, the research findings were discussed in relation to previous studies. The presentation started with an introduction, followed by ANC, DC, and PNC services utilization. Finally, the factors that influence ANC, DC, and PNC services utilization were discussed in detail.

In general, there are differences in ANC services utilization. These differences may be attributed to the differences in the type of healthcare facilities. There was also a difference in the level of women's satisfaction with maternal health care services. Since long distance and long waiting times were identified as barriers for maternal health care services utilization by health care workers in Awash Fentale woreda, this may underestimate the overall satisfaction, and many factors, including unidentified factors, may contribute to such gaps. The next chapter presents the implementation strategy relevant to the subject of the study.

CHAPTER 6
PROPOSED IMPLEMENTATION STRATEGIES FOR PROVIDING OPTIMAL ANTENATAL, DELIVERY, AND POSTNATAL SERVICES UTILIZATION IN AWASH FENTALE WOREDA

6.1 INTRODUCTION

This chapter presents strategies proposed by the researcher to enable program planners to formulate measures to improve maternal healthcare services in Awash Fentale woreda. The strategies were developed based on the findings of the study and by reviewing the existing literature.

From the findings of the current study, antenatal adequacy in terms of the frequency of visits was much lower than what was reported in the literature. This implementation strategy will provide the basis to devise better ways of providing optimal maternal healthcare services utilization using available resources in Awash Fentale woreda. Despite the presence of policies and strategies in the country, a number of women are not accessing the recommended services in the woreda for different reasons. This implementation strategy is proposed with the objective that policy makers, program planners, and Woreda Health Office administrators and healthcare practitioners will better serve women in Awash Fentale woreda equally and equitably.

6.2 VALIDATION OF THE STRATEGIES BY EXPERTS

The developed strategies were sent to experts who had experience in maternal health care to validate and review them externally. The experts were selected purposefully based on their practical experience of maternal health care. The purpose of the validation was to ensure that the proposed strategies are feasible, acceptable, and practical.

6.3 INTEGRATION OF THE FINDINGS WITH THE THEORETICAL FOUNDATION

The conceptual framework of this study was the health care-seeking behavior model developed by Anderson and Newman (1973). This behavioral model proposes that the use of health care services is a function of three sets of individual characteristics:

1. Individual predisposing factors, including demographic variables such as age, sex, and previous illnesses or health conditions:

- Socio-economic status, which is a reflection of the individual's social standing measured by characteristics such as educational attainment and the occupation of the family head.
- The demographic and social status factors are linked to a third subcomponent of the predisposing factors, which include attitudinal beliefs such as attitude, values, and knowledge. Individuals who are more aware or have stronger faith in the efficacy of treatment are more inclined towards healthcare utilization (Anderson & Newman 2005:12, 14-15). According to this study, from the components of socio-economic status, education attainment of women, their media exposure, and income of the family head were identified as factors that influence maternal health care services utilization.

2. Enabling characteristics: Enabling conditions ensure the availability of healthcare services to individuals. These conditions can be found both on family and community levels and are measured by resources such as income, health insurance coverage, or any source of payment regardless of the individual's regular source of care or nature and accessibility of that source of care. Apart from family attributes, community-level characteristics such as the amount, varieties, locations, structure, and distribution of health care facilities and personnel linked to means of transportation and travel time to and waiting time for healthcare are some of the enabling characteristics that influence the use of health care services. The type or place of residence or rural-urban nature of the community also determines services utilization as local norms and values influence the behavior of the individual (Anderson & Newman 2005:16). The findings of this study

indicated that husbands' income and the family owning a Bajaj were the most important factors associated with maternal healthcare services utilization. Moreover, family members' influence, not experiencing complications during previous pregnancy, distance of health care facility, husbands' influence, long waiting time, fear of operation, and little respect from health care workers were mentioned to be barriers of DC services utilization.

3.Need characteristics: This covers aspects such as characteristics of illness, perceived health status, and expected benefits from treatment. According to Anderson and Newman (1973), the need factor is the most immediate cause of healthcare services usage. The need factor reflects the perceived health status, as indicated by the severity and the morbidity conditions or the number of morbidities. In this study, it was indicated that nearly 39% of the respondents preferred a health care facility for ANC services due to perceived good quality of services and 14.2% due to the short distance from their residence. Perceived low cost of services, short waiting time, husbands' influence, experienced low cost of services, and family and friends' influence were some of the reasons mentioned by the respondents. Figure 6.1 indicates the new conceptual framework developed for determinants of maternal health care services utilization.

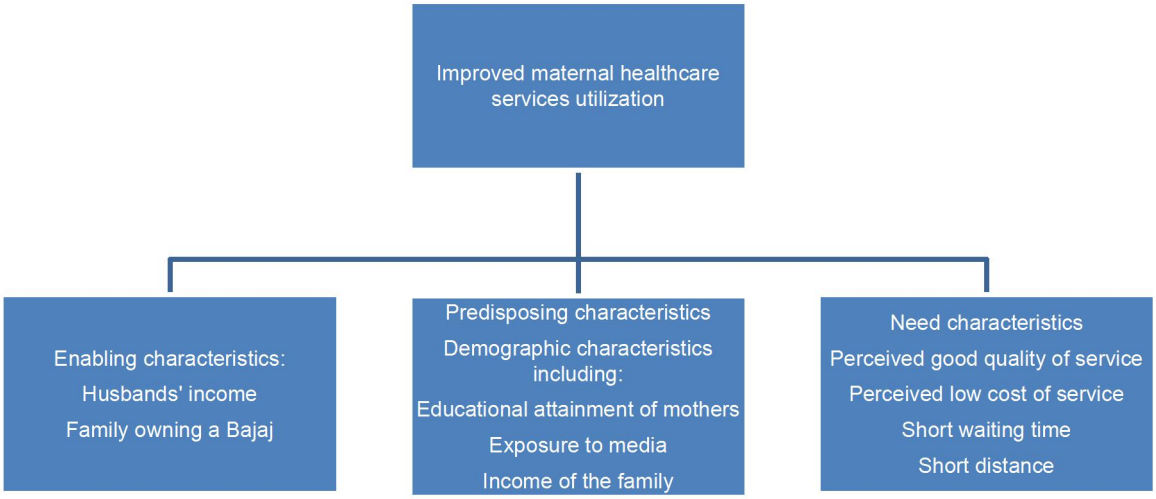

Figure 6.1: New conceptual framework developed for determinants of maternal health care services utilization

The new conceptual frame work depicts that the enabling factors for having improved maternal health care service utilization included husband income and owning Bajaj by the family. Whereas, educational attainment of mothers, income of the family and media exposures were identified as predisposing factors. The need characteristics included aspects such as perceived low cost of service, short waiting time and short distances.

6.4 IMPLEMENTATION STRATEGY

6.4.1 Purpose of the strategy

The purpose of the implementation strategy is to help program planners and healthcare facility leaders to formulate measures to improve maternal health care services utilization in Awash Fentale woreda.

6.5 BASIS FOR THE DEVELOPMENT OF THE IMPLEMENTATION STRATEGY

The background information, the literature review, the strategy of the Health Sector Transformation Plan (HSTP) of Ethiopia, and, most importantly, the findings of this study, are the basis for the development of this implementation strategy.

6.6 POLICY CONTEXT

The Ethiopian government has already endorsed a number of initiatives and policies that provide a basis for the development of this strategy. MCH issues are given due attention in the national policies and strategies.

The government, among others, has:

- paid special attention to the health needs of women and children through the Health Policy of the Transitional Government of Ethiopia (1993);
- developed a 20-year Health Sector Development Plan (HSDP)(FMOH 2010b);
- developed an innovative health extension program, including urban health extension packages to reach the community; and
- devised an HSTP (FMOH 2015).

6.7 RESEARCH CONTEXT

“Evidence-based strategies, government ownership and political will, comprehensive and integrated equity based approaches, and supportive partnerships are shown to be effective and to accelerate progress towards achieving the reduction of maternal and child mortalities” (UNICEF2013:67).Innovative approaches in maternal and newborn healthcare will also require innovative evaluation strategies. The innovative strategies include integrating maternity waiting homes as part of the health care system, maternal and prenatal death review to improve the quality of service, a COMBI approach to ANC, a nationwide upgrade of healthcare facilities into birthing centers to address inequities in access to delivery services among the most deprived women, essential intra-partum and newborn care protocols, and involving communities in addressing maternal health inequalities. Community-based integrated primary healthcare interventions have been proved as an effective and efficient way to reduce maternal deaths and to improve the utilization of maternal healthcare services in Ethiopia. The government of Ethiopia has adopted an approach called the HEP to provide services in pastoralist areas (El Shiekh & Vander Kwaak 2015:5).

6.8 THE HEALTH SECTOR STRATEGIC PILLARS

The Ethiopian government, under the HSTP, has endorsed health sector strategic pillars such as:

1. Excellence in healthcare services delivery
2. Excellence in quality improvement and assurance
3. Excellence in leadership and governance
4. Excellence in health system capacity

6.9 STRATEGIES TO IMPROVE MATERNAL HEALTHCARE SERVICES UTILIZATION

Table 6.1: Major findings of the research

Findings on ANC	Findings on DC services	Findings on PNC services	Findings on health-related issues
Nearly 20% of the respondents indicated that their last-born child was unintended at the time of conception, of which 16.4% of the births were not wanted.	Approximately 81% of the respondents gave birth at a healthcare facility.	More than 55% of the respondents had PNC visits, while 44.4% did not have any PNC visits.	Approximately 52% of the respondents were satisfied with the care and attention they received from the healthcare provider, while 43.1% were not satisfied.
Of the respondents, 19.2% did not have any ANC visits.	Family influence, not experiencing complications during previous pregnancy, distance of healthcare facility, husbands' influence, long waiting time, fear of operation, and little respect from healthcare workers were mentioned as barriers to DC services utilization.	No complications experience, family and husbands' influence, not trusting the healthcare facility, and unavailability of quality service were the major barriers for PNC services utilization.	More than 37% of the respondents made decisions regarding seeking healthcare with their partners, while more than 33% had either their husband or partner decide for them.
The proportion of the respondents who had ANC visits decreased with an increasing level of education.	More than 59.5% of the respondents were attended to by clinical nurses/midwives during their delivery.	Income <1,500ETB and not watching television were negatively associated with PNC services utilization.	Nearly 78% of the respondents did not read either newspapers or magazine at all.
More than half (54.7%) of the respondents had inadequate (<4) ANC visits.	Approximately 16% of the respondents were attended to by TBAs.		Of the respondents, 59.2% never listened to the radio.
Of the ANC clients, 47.4% initiated their first visit within 12 weeks of gestation.	Not attending school and not watching television were negatively associated with DC services utilization.		Approximately 63% of the respondents watched television every day.
Nearly 39% of the respondents preferred a healthcare facility for ANC services due to the perceived good quality of service and 14.2% due to the short distance from their residence.			
Approximately 72% of the respondents accessing ANC services were immunized against tetanus.			

Findings on ANC	Findings on DC services	Findings on PNC services	Findings on health-related issues
Approximately 69.4% of the respondents were tested for HIV.			
More than 36% of the respondents who had ANC visits were advised about the benefits of breast feeding and family planning.			
More than 65.4% of the respondents were counseled about the danger signs of pregnancy.			
Never attending school was negatively associated with ANC visits.			
Not watching television and not owning a Bajaj were negatively associated with the adequacy of ANC visits.			

6.9.1 Development of the strategies

The strategies were developed based on the research findings and expert analysis by managers, practitioners, and experts from both public health institutions and NGOs to harmonize with the identified priorities.

These strategies should be used in line with the existing national policies, strategies, and guidelines. It is clear that every aspect of maternal healthcare services in Awash Fentale woreda cannot be captured beyond the findings of the study. However, the researcher believes that the strategies will help planners and implementers to consider other options for improving maternal health care services utilization. In this study, Donabedian's model (see Figure 6.2) was used as the basis for describing the factors associated with maternal health care services utilization and the steps followed to develop strategies (Dinku 2015:89).

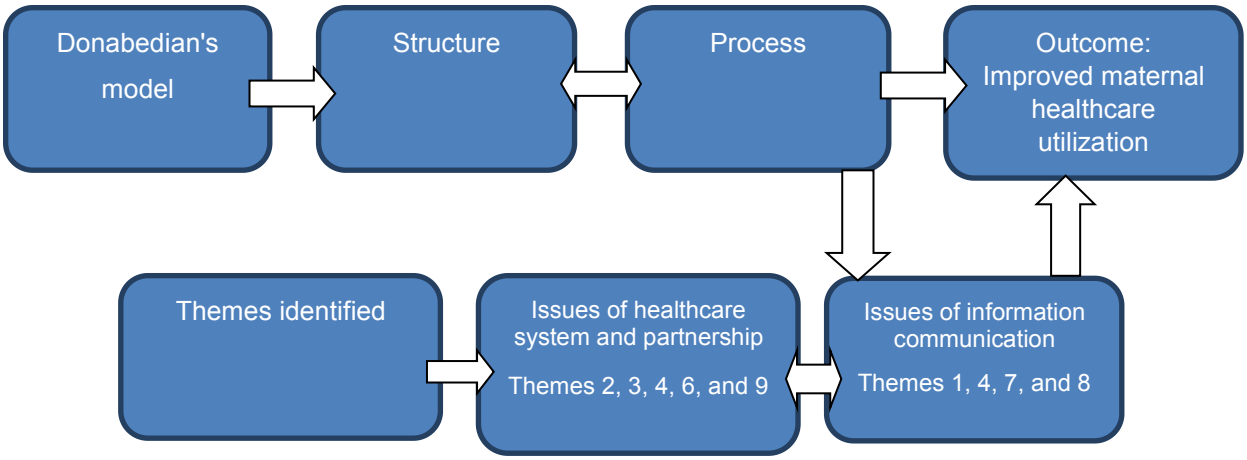

Figure 6.2: Themes identified under Donabedian's model

The researcher identified the following themes in relation to the structure and process for improved maternal healthcare services utilization:

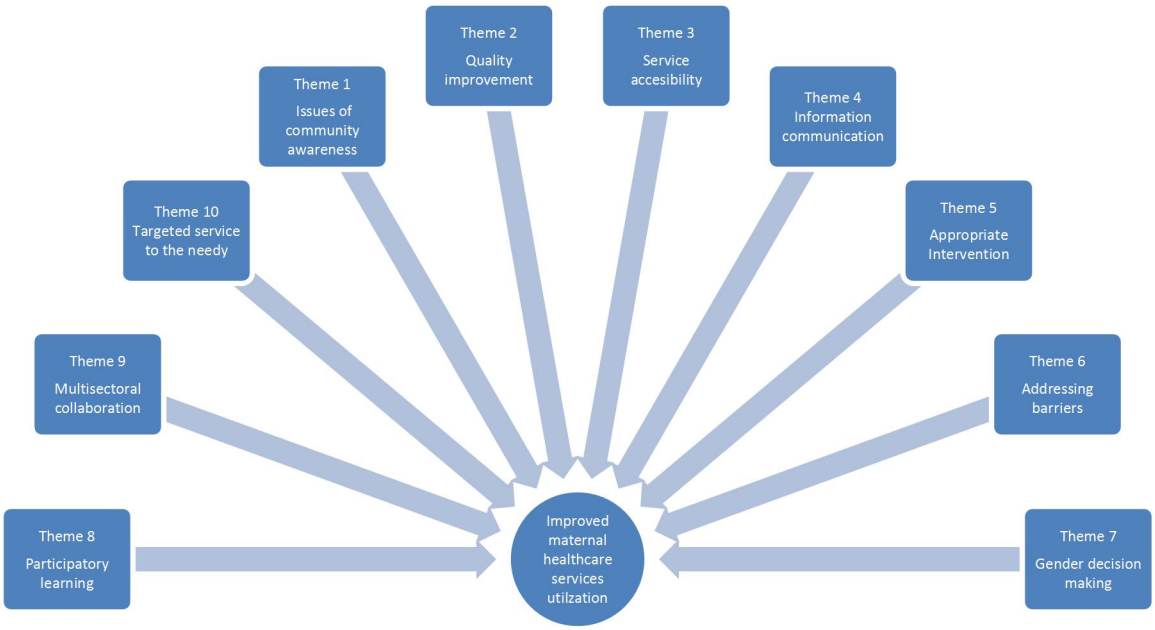

Figure 6.3:Pictorial presentation of themes for the development of strategies

6.9.2 Strategy for Theme 1: Community awareness-raising activities

The community in Awash Fentale woreda should be aware of the maternal healthcare services provided to women during antenatal, delivery, and postnatal periods. The community or women should be informed of the risks associated with pregnancy and

home delivery. Community and health extension workers have essential roles to play in this issue.

6.9.3 Strategy for Theme 2: Quality improvement and assurance

Special attention should be paid to ANC services provided to pregnant women in line with the number of visits. Women in Awash Fentale woreda should be advised about the danger signs and complications of pregnancy. If there is a failure to provide basic ANC component services, the goal of the provision of quality services will not be achieved.

6.9.4 Strategy for Theme 3: Service accessibility

Services should be directly and permanently accessible with no undue barriers of cost, language, culture, geography, or any other factors. Remarkable progress has been made in improving access to primary healthcare units through massive expansion of healthcare centers and health posts, as well as the deployment of a low- and mid-level healthcare workforce (FMOH 2015:41). However, it is indicated in this research that more than 19% of mothers in Awash Fentale woreda still do not have access to either ANC or DC services. Facilitating geographical accessibility is also crucial for the increased utilization of maternal care services (Elmusharaf, Byrne &O' Donovan 2015:5). Innovative intermediate and alternative transport initiatives should be introduced to reduce the delay in referring women with maternal complications. A study conducted in Malawi indicated that using motorcycle ambulances for maternal health care services reduced referral delays by between 35% and 75% (Elmusharaf et al. 2015:5).

6.9.5 Strategy for Theme 4: Enhancing information and communication

The scope of the information domain includes the availability of information about best practices to healthcare workers; the way in which those providing care give information to service users and access to communities and individuals to information will help them manage their own health (FMOH 2015:79).

The current research findings showed that nearly 35% of women receiving ANC were not counseled about the danger signs and complications of pregnancy. It is stated in the

national protocol that a pregnant woman has the right to information about her health; to discuss her concerns, thoughts, and worries; privacy and confidentiality; and to express her view about the service she receives (FMOH 2010a:8). Most ANC booklets in the study area provide one-way communication, and was not designed in consultation with local women. Unidirectional communication weakens the links between frontline healthcare providers and women. This may lead to suboptimal maternal health outcomes.

6.9.6 Strategy for Theme 5: Appropriate interventions

This study found an unacceptably high rate of dissatisfaction with regard to the care and attention the women received from healthcare providers. Hence, health care service providers should comply with ethical and professional standards as recommended in the guidelines or protocols

6.9.7 Strategy for Theme 6: Addressing the barriers to maternal healthcare services utilization

There are a number of approaches to overcome barriers to maternal healthcare utilization for improving maternal and reproductive health. The researcher identified the following as barriers to maternal healthcare services utilization: family members' influence, not experiencing complications during previous pregnancy, distance of healthcare facility, husbands' influence, long waiting time, fear of operation, and little respect from healthcare workers. To address these barriers, specific community-based interventions, including community members (specifically women) in participatory learning and action on maternal health, are very essential. Moreover, home visits and home management and promotion of birth and newborn care preparedness via home-based ANC by female community healthcare workers may reduce the burden imposed on new mothers.

6.9.8 Strategy for Theme 7: Gender decision-making norms

Gender norms determine socio-cultural identity construction and attribution of rights and reflect unequal power relations (Elmusharaf et al. 2015:6). These norms may affect the risks and vulnerability of health care-seeking behavior.

The researcher found that for more than 33% of mothers, either their husband or partner decided for them regarding their maternal health care seeking. Gender norms should therefore be adequately considered during the implementation of interventions and strategies to improve maternal healthcare.

6.9.9 Strategy for Theme 8: Practicing participatory learning and action

Based on the identified problems, it is important to plan for locally feasible solutions, implementation, and assessment. Interactive meetings, including stories, games, and pictures, to discuss preventive care seeking and treatment for common maternal problems should be conducted.

6.9.10 Strategy for Theme 9: Multi-sectoral collaboration

Although the primary responsibility of meeting the needs of the community lies with the government, the goals and targets of maternal healthcare services in Awash Fentale woreda can be achieved through the alignment of resources from local partners, including NGOs and other private partners. The commitment of the government towards public-private partnerships, as stated in the HSTP (FMOH 2015:1), should be enhanced in order to ensure an effective partnership.

6.9.11 Strategy for Theme 10: Targeted services to the needy

Not all women in Awash Fentale woreda are affected similarly. Women who are not educated, have no exposure to media such as watching television, and have low income are less likely to use maternal healthcare services. It is therefore mandatory to give priority to such segments of society.

Table 6.2: Biographic information of experts who validated the strategies

No.	Qualification	Occupation	Work experience
1	BSc. Degree in Public	Reproductive Health Coordinator in	Three years' work experience

	Health	Awash Fentale woreda	
2	MPH	Head of Awash Fentale Health Center	Four years' work experience
3	MPH+PhD candidate	Lecturer	More than ten years
4	PhD	Reproductive health expert at an international NGO	Eight years' work experience as Reproductive health expert
5	MPH	Reproductive health expert	Five years' work experience

Table 6.3: Criteria for validating each strategy

Criteria	Strongly disagree(1)	Disagree(2)	Agree(3)	Strongly agree(4)
Clarity The specific strategy is simple and easily understandable				
Specificity The strategy specifically focuses on maternal healthcare services utilization				
Reliability The strategy can be used consistently by other healthcare facilities				
Flexibility The strategy can be flexible in a unique setting or facility				
Effectiveness The strategy is able to achieve the objectives				
Validity The strategy is justifiable or evidence based				
Relevance The strategy is appropriate for strengthening maternal healthcare services utilization				
Applicability The target users are clearly defined				
Acceptability The strategy is realistic and acceptable by the Ministry of Health or Regional Health				

Bureau				
Achievability Can be executed by the Regional Health Bureau/ Woreda Health Office				

The strategies were sent to the experts via email. An abstract of the study and ethical clearances were attached along with the strategies. The experts were also provided with the above criteria to validate the strategies. The experts were requested to score each strategy out of 40 and the researcher considered the strategy to be at an acceptable level when the mean score was 30 (75%) and above. The experts were expected to evaluate each strategy using a Likert scale (Dinku 2015:103).

Table 6.4: Average scores of evaluators on each strategy

Strategy	Evaluators					
	Eval. 1	Eval. 2	Eval. 3	Eval. 4	Eval. 5	Average
Strategy 1	36	34	40	38	30	35.6
Strategy 2	35	28	30	32	25	30
Strategy 3	30	33	30	37	25	31
Strategy 4	40	35	30	36	30	34.2
Strategy 5	40	40	40	34	30	36.8
Strategy 6	34	30	40	28	30	32.4
Strategy 7	28	30	30	34	20	28.4
Strategy 8	37	32	40	36	30	35
Strategy 9	35	36	30	34	24	31.8
Strategy 10	40	28	30	34	20	30.4

6.9.12 Evaluators' comments on low scores

As indicated in Table 6.4, Strategy 7 was given the lowest score by the evaluators, which was less than the acceptable score of 30. The evaluators were not convinced of the strategy in relation to acceptability, feasibility, achievability, and effectiveness. The evaluators commented that gender decision-making norms need attitudinal and behavioral changes in seeking long-term efforts and investments. Although the evaluators provided specific comments, the strategy was not removed as a whole as some of it was relevant and justifiable for improving maternal health care services utilization. Hence, the comments were accepted and the strategy was modified.

6.10 PRIORITIES FOR ACTION

Table 6.5 shows a summary of actions focusing on the improvement of maternal healthcare services.

Table 6.5: Summary of actions focusing on the improvement of maternal healthcare services in Awash Fentale woreda

Theme of action	Purpose	Activities	Outcomes
Addressing the factors that influence maternal healthcare services utilization	Improving and increasing services utilization	• Enhancing social mobilizations targeting women's school enrollment • Encouraging women to have exposure to media, including watching television, reading newspapers, etc. • Devising strategies for income generation	Good ANC, DC, and PNC services utilization will be achieved
Adherence to professionalism	Practicing medical ethics	• Healthcare professionals should be aware of the service they give to women • The healthcare service provider should be aware of the right of pregnant women to receive the right information and appropriate care	• Unethical malpractices will be minimized • Women's satisfaction will be increased
Assurance of the adequacy of ANC visits	Improving the quality of services provided to women	• All pregnant women should receive all the basic ANC components in line with the national guidelines • Improve accessibility of services where services are affordable to the majority of women • Continuous assessment of women on every visit • Awareness creation on the benefits of early initiation of ANC visits • Encouraging women to have media exposure such as watching television and reading newspapers	• High-risk pregnancy will be detected early • Increased institutional delivery
Strengthening family planning services	Reducing unintended pregnancy	• Counseling women about the benefits of family planning during ANC visits	The prevalence of unintended pregnancy will be reduced

Theme of action	Purpose	Activities	Outcomes
		• Expanding family planning services within the community	
ANC interventions	Avoid unnecessary health outcomes and wastage of resources	• Women should be informed of the benefits of family planning, breast feeding, iron supplements, anti-malaria treatment, anti-heliminitic treatment, and immunizations • Women need to have the opportunity to make decisions themselves	Women will acquire the desired knowledge of family planning, breastfeeding, and other medical interventions
Information and communication	Improving ANC,DC, and PNC services	• Every woman must be counseled about the danger signs and complications of pregnancy • General public awareness about timely ANC, DC, and PNC services	Women will be confident about the services they need
Preference of women on where to give birth	Protecting the reproductive health rights of women	• Involvement in decision-making process • Healthcare provider approach to be improved • Quality of service should be improved	Increased women's satisfaction
Sectoral collaborations	Provide alternatives for the community	• Improve the quality of services in collaboration with NGOs and the private sector • Enhance the regulatory and monitoring activities and the quality and efficiency of the services	Alternative healthcare services to be fairly accessible
Commitment to address the barriers to maternal healthcare services utilization	Improving ANC, DC, and PNC services utilization	• Improve participatory learning • Strengthen home visits and home management activities	Improved and increased maternal healthcare services utilization
Evidence-based service improvement /operational research	Adherence to policy and practice through research	• Conduct community surveys to assess gaps • Regular program evaluation research • Use administrative data for decision making	Scientifically acceptable measures to be formulated

6.11 IMPLEMENTATION OF THE STRATEGY

Since the main purpose of developing this strategy is to help program planners formulate appropriate measures to improve maternal health care services utilization in Awash Fentale woreda, it will be disseminated to the concerned bodies through different outlets, including workshops and seminars.

6.12 CONCLUSION

This chapter presented a proposed implementation strategy based on the findings of the study. The implementation strategy brings together evidence from the literature review, policies, guidelines, and the current study. Respective bodies under the FMOH of Ethiopia, as well as Bureau of Health of the Afar National Regional State and the Awash Fentale Health Office are advised to use this strategy as an additional resource to formulate appropriate measures in order to improve maternal health care services utilization. The next chapter presents the conclusion and recommendations of the study.

CHAPTER 7
CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

This chapter presents the conclusions of the research with regard to the stated questions and the problem statement. The findings of the research, recommendations, and the contributions of the study are summarized in this chapter. The limitations of the study are also presented.

7.2 RESEARCH DESIGN AND METHOD

Quantitative descriptive research was the selected methodology for this study. Because of the presence of different ethnic societies in Awash Fentale woreda, stratified sampling was employed for this study.

Data were collected using structured questionnaires administered to 422 women aged 15 to 49 years who gave birth in the past two years before the study was conducted. The data were entered and analyzed using IBM's SPSS 25. Ethical clearance was obtained from the Research and Ethics Committee of the Department of Health Studies of UNISA and the Afar National Regional State, Ethiopia.

7.3 SUMMARY AND INTERPRETATION OF THE RESEARCH FINDINGS

The summary of the research findings are presented in relation to the objectives and research questions, as well as the main outcome variable of interest to the study.

7.3.1 Preference of women in terms of ANC services utilization

This study found that approximately 39% (n=166) of women in Awash Fentale woreda preferred a health care facility from which to receive ANC services due to perceived good quality of services, and 14.2% (n=60) of the respondents chose health care facilities for their ANC services because the distance was short to reach the health care facility. Nine percent(n=38) of the respondents preferred health care facilities for their ANC services due to their previous experiences of good quality of services at healthcare facility level. Perceived low cost of services, short waiting time, husbands' influence, experience of low cost of services, and family and friends' influence were some of the reasons mentioned by the respondents for their preferences to obtain ANC services at a healthcare facility.

7.3.2 Barriers for delivering at a specific health care facility

In this study, the first barrier for delivering at a health care facility was found to be family members' influence. Family members did not allow the women to give birth at a healthcare facility. Not having complications during a previous pregnancy or delivery was the second barrier for not giving birth at a health care facility and the distance of the health care facility from their home was the third reason mentioned for not choosing a healthcare facility. Husbands' influence, long waiting time, fear of operation, and little respect from health care workers were among the reasons given by the respondents to not give birth at a healthcare facility.

7.3.3 Women's satisfaction with maternal healthcare services

Two-hundred (52%) respondents were satisfied with the care and attention they received from the health care provider, while 166 (43.1%) responded that they were not satisfied with the care and attention they received from the health care provider. With regard to the attitude of health care personnel, 153(39.7%) women were satisfied with the attitude of the healthcare personnel in providing maternal health care services, while 200 (52%) were not satisfied. Less than half (n=170;44%) of the respondents claimed that they were satisfied with the cleanliness of the health care facility, while 200 (52%)

answered that they were not satisfied with the cleanliness of the health care facility. The participants were also asked about their satisfaction pertaining to the amount of privacy they had and the medication they were provided. Only 135 (35%) of the respondents were satisfied with the privacy they had and only 82 (21.3%) were satisfied with the medication they received.

7.3.4 Preferences for places to give birth

This research found that 80 (19%) of the respondents preferred to give birth at home and the remaining 342 (81%) preferred a health care facility for their delivery.

7.3.5 Factors that influence maternal health care services utilization

The findings from the binary logistic regression indicated that those women who never attended school were 82.5% less likely to have ANC visits as compared to women who attended school. Since the p-value after carrying out the multivariate analysis on binary logistic regression was <0.001, never attending school is statistically significant and strongly associated with ANC visits (AOR=0.175).

In this research, women who did not watch television were 53% less likely to have four and above ANC visits compared to those women who watched television every day. It was stated in the literature that exposure to media was among the various socio-demographic factors that influence and cause a difference in the utilization of maternal health care services (Tsawe et al. 2015:2; Shahram et al. 2015:602).The findings of this research also showed that women who read the newspaper everyday were 11.92 times more likely to have adequate ANC than women who did not read newspapers at all (AOR=11.918).Moreover, women who did not own a Bajaj were 50% less likely to have antenatal adequacy compared to those women who owned a Bajaj. Although there was no direct research finding dealing with Bajajs as a factor of ANC services utilization, a study conducted in Swaziland showed that maternal wealth was associated with ANC services utilization.

In this study, women who did not attend school were 80% less likely to use DC services compared to those who attended school (AOR=0.214). Since the p-value for this variable was less than 0.001, it is highly significant. Moreover, not attending school was strongly associated with DC services. Many research studies indicate that women's education is a strong predictor of place of delivery. Women with no education are less likely to deliver in health care institutions than literates (Fikre & Demissie 2012:5; Ayele et al. 2014:6).

Another variable that showed an association with maternal DC services was not watching television. Hence, women who did not watch television at all were 59.5% less likely to use DC services compared to women who watched television every day.

This research found that women whose husbands' income was≤1,500 ETB were 81.4% (1-0.186) less likely to use PNC services compared to those whose husbands' income was above 5,001ETB (with AOR=0.186 and p=0.001). A similar statistical association was also seen among women whose husbands' income was between 1,501 and 5,001 ETB, with AOR=0.383 and p=0.024, which is less than the cut-off point of p=0.05. Hence, regardless of the level or degree of income, the husbands' income was statistically significant and earning less income among husbands might lead women to have less PNC services utilization. Another independent variable that showed statistical significance was watching television. Women who never watched television were 58% less likely to use PNC services compared to those women who watched television every day, with AOR=0.414 and p=0.008, which is less than p=0.05. Women who watched television less than once a week were also 58.7% less likely to use PNC services compared to those women who watched television every day, with AOR=0.0413 and p=0.041. Therefore, not watching television at all and watching television less than once a week were statistically associated with PNC services utilization.

7.4 CONCLUSION

This research found that 43% of women were not satisfied with the care and attention given by the healthcare providers and approximately 52% of them were not satisfied with the cleanliness of the healthcare facilities. Hence, much emphasis should be

placed on care and attention and the cleanliness of the healthcare facilities in Awash Fentale woreda.

It was interesting to note that most of the respondents delivered in health care facilities despite the general doubts about the quality of services of these facilities. It was illustrated in this study that family members' influence was one of the major barriers identified for DC services utilization.

The findings of this study also indicated that not attending school, not watching television, husbands' low income, not owning a Baja, and not reading newspapers are factors that lead to decreased maternal health care services utilization in Awash Fentale woreda.

7.5 RECOMMENDATIONS

The researcher believes that the findings of this study provide relevant and invaluable information on ANC, DC, and PNC services utilization among women of reproductive age in Awash Fentale woreda. Although there was high coverage with regard to first ANC visits and institutional delivery, there were significant gaps that should be addressed in terms of women's satisfaction and decision making about the services they were provided, the adequacy and timing of initiation of the first ANC visit, and the factors that influence maternal health care services utilization. On the basis of the findings, the researcher makes the following recommendations to decrease the identified gaps.

7.5.1 Recommendations for policy makers, program designers, and implementers

The following recommendations are made for policy makers, program designers, and implementers:

- To improve maternal health care services utilization in Awash Fentale woreda, policy making, planning, and implementation should focus on factors that influence maternal health care services utilization. Using maternal health care

services among women with low levels of educational status, husbands' low income or wealth quintile, and low media exposure should be encouraged. The current level of adequacy of ANC coverage of 54.4% of women having at least four visits should be increased. This may improve women's chances of receiving adequate ANC services and increase the probability of institutional delivery.

- To minimize unintended pregnancy and to maximize ANC utilization, access to contraceptive services and related information should be enabled and communication should be improved.
- To increase institutional delivery and PNC services utilization, encourage community awareness raising and participatory learning activities.

7.5.2 Recommendations for the Bureau of Health

The following recommendations are made for the Bureau of Health of the Afar National Regional State:

- The health care program in the Afar National Regional State should focus on improving maternal health care services at each level of the healthcare system, especially at the public health level. It is important to focus on the public health care facilities because they are the main providers of health care to disadvantaged women in the region.
- A clear monitoring system ought to be established in order to have strict follow-ups on the adherence to professionalism, which will enable the women to receive the services they are entitled to.
- Advocacy for stakeholders, including health care service providers, on enhancing maternal healthcare services utilization and the rationale for the use of medical interventions should be developed. The findings of this study showed that, overall, women's satisfaction with maternal healthcare services was below 50%. The researcher therefore recommends that the Bureau of Health should work on improving the care and attention given to pregnant women by health care providers, increasing the cleanliness of the health care facilities, and changing the attitude of health care providers.

7.5.3 Recommendations for health care facilities and service providers

The following recommendations are made for healthcare facilities and service providers:

- To improve ANC services, the priority agenda should focus on raising awareness among women of the timing of initiation of ANC visits and the basic component services of ANC.
- In Awash Fentale woreda, the majority of the antenatal attendants visit public healthcare facilities, where the quality of care is relatively poor. Improving the quality of ANC is therefore a critical issue.
- The findings of this research showed that health care service providers do not provide adequate information and counseling to women regarding the danger signs and complications of pregnancy during ANC visits. Hence, efforts need to be exerted to improve women's awareness of ANC, DC, and PNC services through effective communication by the health care providers.
- Since not attending school is statistically strongly associated with less ANC and DC services utilization, due attention should be given to women to attend school.
- Health care service providers should follow the national recommendations for basic ANC component services.
- Despite a remarkable number of ANC attendance and institutional deliveries among women in Awash Fentale woreda, approximately 19% of women still preferred to deliver at home. The community should therefore be encouraged to bring every pregnant woman to a health care facility, and the facilities should provide good-quality ANC services and strengthen health education at ANC centers.

7.5.4 Recommendations for professional associations, NGOs, and partners

The following recommendations are made for professional associations, NGOs, and partners:

- Professional associations should work harmoniously with the public and private sectors to improve maternal healthcare services by reducing professional malpractice.
- Medical and public healthcare professionals' associations should advocate health information, informed choices, and good-quality maternal healthcare services.

7.5.5 Recommendations for future research

The following recommendations are made for future research:

- Qualitative research is recommended for in-depth understanding of the perception of women regarding the utilization of maternal healthcare services.
- This study should be replicated in other parts of the country by involving male partners or husbands, family members, and other members of the community.

7.6 CONTRIBUTIONS OF THE STUDY

This study developed relevant findings that have implications for responsible bodies at different levels, including policy makers, program planners, woreda health office administrators, and health care service providers to adopt strategies on factors that influence maternal healthcare services utilization or to focus on the improvement of maternal healthcare services.

The great tendency of women towards public healthcare facilities is mainly attributed to women's perception of good-quality service and short distance to reach services in Awash Fentale woreda should be of concern for policy makers, program managers, and implementers. Not addressing the basic contents of ANC, including poor counseling regarding the danger signs and complications of pregnancy, are some of the aspects on which the health care service providers must concentrate to satisfy the needs of women.

The barriers for women for delivering at a health care facility, including the influence of family members, having no previous complications during pregnancy or delivering at home, long distances, husbands' influence, long waiting time, fear of operation, high cost of services, little respect from health care workers, and lack of privacy, are the priority issues that health care providers should focus on to improve institutional delivery.

7.7 LIMITATIONS OF THE STUDY

While interpreting the findings of this research, it will be relevant to consider some of the limitations of the study. It is clear that a cross-sectional study design does not allow making causal inferences about the relationship between ANC, DC, and PNC services and risk factors. The study was also limited to Awash Fentale woreda and the findings might not reflect the situation in other woredas of the Afar National Regional State. Limitations on research assistant's heat exhaustion, language and sampling bias were also considered.

7.8 CONCLUDING REMARKS

The aim of this study was to assess the factors that influence maternal health care services utilization of women seeking ANC, DC, and PNC services in Awash Fentale woreda. The study achieved its objectives and answered the research questions.

The findings of this research indicated that not attending school significantly influenced low utilization of ANC visits, while exposure to media, including reading newspapers, was positively associated with the adequacy of ANC visits. Not watching television and not owning a Bajaj led to low adequacy of ANC services utilization. Similarly, factors such as not attending school and not watching television at all influenced DC services utilization negatively, while husbands' low income, and not watching television at all were negatively associated with PNC services utilization. Hence, the Awash Fentale Health Office should focus on these factors and adopt mechanisms to improve maternal health care services utilization.

The findings on reasons for preferring a health care facility for ANC services indicated that a significant number of mothers preferred a healthcare facility for their ANC services because of the perceived good quality of services. However, if the healthcare facilities are not providing the desired quality services, women may be forced to take other options, which can endanger their lives.

It was an interesting finding in this study that only 17% of women among the study population decided alone on their healthcare. According to the Cairo ICPD (1994) on reproductive and sexual health rights of women, women have the right to decide on their own reproductive and sexual matters freely without any coercion. Hence, efforts should be exerted to increase women's self-decision making in Awash Fentale woreda.

In this study, it was illustrated that family members' interference and the absence of complications during the time of delivery were major barriers for DC and PNC services utilization respectively. Therefore, addressing the barriers to DC and to PNC services utilization should be the priority of the community of Awash Fentale woreda in general and the health care service providers in particular. Finally, the government must take the future of maternal health care services utilization seriously in line with the expansion of public health care facilities in the country.

REFERENCES

Aboagye, E. & Agyemang, O.S. 2013. Maternal Health-Seeking Behavior: The Role of Financing and Organization of Health Services in Ghana. *Global Journal of Health Science*, 5(5), pp.67–79.

Adedini, S.A., Odimegwu, C., Bamiwuye, O., Fadeyibi, O. & De Wet, W., Fadeyibi, O. & De Wet, N. 2014. Barriers to Accessing Healthcare in Nigeria: Implications for Child Survival. *Global Health Action*, 7(10), pp. 1–10.

Akeju, D.O., Vidler, M., Sotunsa, J.O., Osiberu, M.O., Orenuga, E.O., Oladapo, O.T., Adepoju, A.A., Qureshi, R., Sawchuck, D., Adetoro, O.O., Von Dadelszen, P., Dada, O.A. & The CLIP Nigeria Feasibility Working Group. 2016. Human Resource Constraints and the Prospect of Task-Sharing among Community Health Workers for the Detection of Early Signs of Pre-Eclampsia in Ogun State, Nigeria. *Reproductive Health*, 13(S2), #111.
Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5056470/.

Akhter, S. 2015. Maternal Healthcare Seeking Behaviour of Women from Lower and Upper Socio-Economic Groups of Dhaka, Bangladesh – Fear or Fashion? PhD dissertation, Finders University.
Available at: https://flex.flinders.edu.au/file/4974d077-7eba-40cf-a69a0a89d7957136/1/thesis% 20 Sanzida%20 Akhter%20 signature% 20 removed (2)%20(1).pdf.

Alam, N., Hajizadeh, M., Dumont, A. & Fournier, P. 2015. Inequalities in Maternal Healthcare Utilization in Sub-Saharan African Countries: A Multiyear and Multi-Country Analysis. *PLOS One*, 2015: pp.1–16. Available at: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0120922.

Alemayehu, M. & Mekonnen, W. 2015. The Prevalence of Skilled Birth Attendant Utilization and Its Correlates in North West Ethiopia. *Biomed Research International*,#436938,8pages.
Available at: https://www.hindawi.com/journals/bmri/2015/436938/.

Amdemichael, R., Tafa, M. & Fekadu, H. 2014. Gynecology & Obstetrics Maternal Satisfaction with the Delivery Services in Assela Hospital, Arsi Zone, Oromia Region, Ethiopia. *Gynecology Obstetrics*, 4(12), 257.
Available at: https://www.omicsonline.org/open-access/maternal-satisfaction-with-the-delivery-services-in-assela-hospital-arsi-zone-oromia-region-ethiopia-cas-2161-0932.1000257.php?aid=35831.

Amentie, M., Abera, M. & Abdulahi, M. 2015. Utilization of Antenatal Care Services and Influencing Factors Among Women of Child-Bearing Age in Assosa District, Benshangul Gumuz Regional State, West Ethiopia.*Global Journal of Medical Research: E-Gynecology and Obstetrics*, 15(2), pp. 9–17.

Andersen R. & Newman, J.F. 1973. Societal and Individual Determinants of MedicalCare Utilization in the United States. *Milbank Memorial Fund Quarterly Health and Society*, 51(1), pp. 95–124.

Andersen, R.& Newman, J.F. 2005. Societal and Individual Determinants of Medical Care Utilization in the United States. *The Milbank Quarterly*,83(4), pp. 1–28.

Ango, J.T., Oche, O.M., Kaoje, A.U., Constance, S.E. & Raji, I.A. 2017. Clients' Satisfaction with Maternal and Child Health Services in Primary Health Care Centers in Sokoto Metropolis, Nigeria. *Edorium Journal of Maternal and Child Health*, 2, pp. 9–18.

Aregay, A., Alemayehu, M., Assefa, H. & Terefe, W. 2014. Factors Associated with Maternal Healthcare Services in Enderta District, Tigray, Northern Ethiopia: A Cross-Sectional Study. *American Journal of Nursing Science*, 3(6), p.117–125. Availableat:http://www.sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=152&doi=10.11648/j.ajns.20140306.15.

Atiya, K.M. 2016. Maternal Satisfaction Regarding Quality of Nursing CareDuring Labor and Delivery in Sulaimani Teaching Hospital. *International Journal of Nursing and Midwifery*, 8(3), pp. 18–27.

Awash Fentale Woreda Health Office.2017. *Activity Report for the Year 2017*. Awash, Ethiopia: Awash Fentale Woreda Health Office.

Ayele, D.Z., Belayihun, B., Teji, K. & Ayana, D.A. 2014. Factors Affecting Utilization of Maternal Healthcare Services in Kombolcha District, Eastern Hararghe Zone, Oromia Regional State, Eastern Ethiopia. *International Scholarly Research Notices*, 2014,#917058,7pages.
Available at: https://www.hindawi.com/journals/isrn/2014/917058/.

Bayu, H., Adefris, M., Amano, A. & Abuhay, M. 2015. Pregnant Women's Preference and Factors Associated with Institutional Delivery Service Utilization in Debre Markos Town, North West Ethiopia: ACommunity-Based Follow-Up Study. *BMC Pregnancy and Childbirth*, 15(15), pp.1–9.

Belemsaga, D., Kouanda, S., Goujon, A., Kiendrébéogo, J., Duysburgh, E., Degomme, O. & Temmerman, M. 2015. A Review of Factors Associated with the Utilization of Healthcare Services and Strategies for Improving Postpartum Care in Africa. *Afrika Focus*, 28(2), pp.83–105.

Beltman, H.F. 2016. Place of Birth – Preference, Motivating Factors and Influence of Educational Level. Thesis, University of Twente.
Availableat:https://pdfs.semanticscholar.org/37e8/baa364acd776397fc49242bd354d586dda5a.pdf.

Benova, L., Campbell, O.M.R., Sholkamy, H. & Ploubidis, G.B. 2014. Socio-EconomicFactors Associated with Maternal Health-Seeking Behaviours Among Women from Poor Households in Rural Egypt. *International Journal for Equity in Health*, 13(1), pp.111–126.

Bhattacherjee, A. 2012. *Social Science Research: Principles, Methods, and Practices.* 2nd ed. USA: University of South Florida Scholar Commons.

Bhuiya, A. (Ed.). 2009. *Health for the Rural Masses: Insights from Chakaria*. Bangladesh: ICDDRB.
Available at: https://assets.publishing.service.gov.uk/media/57a08b63ed915d622c000c65/FHSbookHealthforRuralMasses.pdf.

Birara, M. & Gebrehiwot, Y. 2013. Factors Associated with Success of Vaginal BirthAfter One Caesarean Section (VBAC) at Three Teaching Hospitals in Addis Ababa, Ethiopia: A Case Control Study. *BMC Pregnancy and Childbirth*, 13(31),

pp.1–6.

Birmeta, K. 2013. Determinants of Maternal Health Care Utilization in Holeta Town, Central Ethiopia. *BMC Health Services Research*, 13(256). Available at: https://www.ncbi.nlm.nih.gov/pubmed/23822155.

Bitew, K., Ayichiluhm, M. & Yimam, K. 2015. Maternal Satisfaction on Delivery Service and Its Associated Factors Among Mothers Who Gave Birth in Public Health Facilities of Debre Markos Town, Northwest Ethiopia.*Biomedical Research International*, 2015, pp.1–7.

Bowling, A. 2014. *Research Methods in Health Research: Investigating Health and Health Services.* 4th ed. London, UK: McGraw-Hill.

Bui, A.A.T.& Taira, R.K. 2010. *Medical Imaging Informatics*. New York, USA: Springer.

Central Statistical Agency (CSA) of Ethiopia. 2005.*Ethiopia Demographic and Health Survey (EDHS)*. Addis Ababa, Ethiopia: CSA.

Central Statistical Agency (CSA) of Ethiopia. (2007). *Population and Housing Census*: *Strategy and Implementation Plan.*Addis Ababa, Ethiopia: CSA.

Central Statistical Agency (CSA) of Ethiopia. 2011.*Ethiopia Demographic and Health Survey (EDHS)*.Addis Ababa, Ethiopia: CSA.

Central Statistical Agency (CSA) of Ethiopia. 2014. *2014 Ethiopia Mini-Demographic and Health Survey (EDHS)*.

Available at:https://www.unicef.org/ethiopia/Mini_DHS_2014__Final_Report.pdf.

Central Statistical Agency (CSA) of Ethiopia. 2016. *2016 Ethiopia Mini-Demographic and Health Survey (EMDHS)*.

Available at: https://dhsprogram.com/pubs/pdf/FR328/FR328.pdf.

Chomat, A.M., Solomons, N.W., Montenegor, G., Crowley, C. & Bermudez, O.I. 2014. Maternal Health and Health-Seeking BehaviorsAmong Indigenous Mam Mothers from Quetzaltenango, Guatemala. *Revista Panamericana de Salud Pública*,35(2), pp. 113–120.

Choulagai, B.P., Onta, S., Subedi, N., Bhatta, D.N., Shrestha, B., Petzold, M. & Krettek, A. 2014. A Cluster-Randomized Evaluation of an Intervention to Increase Skilled Birth Attendant Utilization in Mid- and Far-Western Nepal. *Health Policy Plan*,32(8), pp. 1092–1101.

Collins English Dictionary. 2016. 'Maternal Healthcare'. Available at: http://www.collinsdictionary.com/dictionary/english.

Coxon, K., Chisholm, A., Malouf, R., Rowe, R. & Hollowell, J. 2017. What Influences Birth Place Preferences, Choices and Decision-Making Amongst Healthy Women with Straightforward Pregnancies in the UK? A Qualitative Evidence Synthesis using a "Best Fit" Framework Approach. *BMC Pregnancy and Childbirth*, 17(103), pp.1–15.

Deo, K.K., Paudel, Y.R., Khatri, R.B., Bhaskar, R.K., Paudel, R., Mehata, S. & Wagle, R.R. 2015. Barriers to Utilization of Antenatal Care Services in Eastern Nepal. *Frontiers in Public Health*, 3(197), pp.1–7.

Desalegn, E., Mekonnen, A. & Abeje, G. 2013. Place of Delivery After Antenatal Care: The Case of Fogera District, Amhara Region, North West Ethiopia. *Journal of Gynecology and Obstetrics*, 2(1), pp. 1–6.

Dinku, F.D. 2016. Strategies to Strengthen Referral and Linkage System of HIV-Positive Clients in Addis Ababa, Ethiopia. Thesis, University of South Africa. Available at: http://uir.unisa.ac.za/handle/10500/20663.

Doctors Without Borders/Médecins SansFrontières (MSF). 2015. *Maternal Health*. Available at: https://www.msf.org.za/about-us/how-we-work/medical emergencies/maternal-health.

Elmusharaf, K., Byrne, E.& O'Donovan, D. 2015. Strategies to Increase Demand for Maternal Health Services in Resource-Limited Settings: Challenges to be Addressed. *BMC Public Health*, *15*, 870. doi:10.1186/s12889-015-2222-3.

El Shiekh & Van der Kwaak, A. 2015. Factors Influencing the Utilization of Maternal Healthcare Services by Nomads in Sudan. *Pastoralism: Research, Policy and Practice*, 2015(5), 23. Available at: http://dx.doi.org/10.1186/s13570-015-0041-x.

Fanta, M. 2005. Assessment of Factors Affecting Utilization of Maternal Heath CareServices in Ayssaita and Dubti towns, Afar Regional State, North East Ethiopia.Master's thesis, Addis Ababa University.

Federal Ministry of Health (FMOH). 2003. *Health Sector Strategic Plan (HSDP-III)*. Ethiopia:Planning and Programming Department.

Federal Ministry of Health (FMOH). 2010a.*Management Protocol on Selected ObstetricsTopics*. Ethiopia: FMOH.

Federal Ministry of Health. 2010b. *Health Sector Development Program IV 2010/11–2014/15*. Ethiopia: FMOH.

Federal Ministry of Health (FMOH). 2015. *Health Sector Transformation Plan (HSTP)*. Ethiopia: FMOH.

Fikre, A.A. & Demissie, M. 2012. Prevalence of Institutional Delivery and AssociatedFactors in Dodota Woreda (District),Oromia Regional State, Ethiopia. *BMC Pregnancy and Child Health*, 9(33), pp.1–6.

Gebremeskel, F., Dibaba, Y.& Admasu, B. 2015.Timing of First Antenatal Care Attendance and Associated Factors Among Pregnant Women in Arba Minch Town and Arba Minch District, Gamo Gofa Zone, South Ethiopia.*Journal of Environmental and Public Health*, 2015, #971506, 7 pages. Available at: https://www.hindawi.com/journals/jeph/2015/971506/.

Gitimu, A., Herr, C., Oruko, H., Karijo, E., Gichuki, R., Ofware, P., Lakati, A. & Nyagero, J. 2015. Determinants of Use of Skilled Birth Attendant at Delivery in Makueni, Kenya: A Cross-Sectional Study.*BMC Pregnancy and Childbirth*, 15(9), pp.1–7.

Grove, S.&Gray, J. 2015. *Understanding Nursing Research*. 3rd ed. Missouri, USA: Elsevier.

Houser, J. 2015. *Nursing Research: Reading, Using, and Creating Evidence.* 3rd ed.Burlington, USA: Jones and Bartlett Learning.

Hailu, M., Gebremariam, A.& Alemseged, F. 2010. Knowledge About Obstetric DangerSignsAmong Pregnant Women in Aleta Wondo District, Sidama Zone, Southern Ethiopia*. Ethiopian Journal of Health Sciences*,20(1), pp. 25–32.

Jackson, R., Tesfay, F.H., Godefay, H. & Gebrehiwot, T.G. 2016. Health Extension Workers' and Mothers' Attitudes to Maternal Health Service Utilization and Acceptance in Adwa Woreda, Tigray Region. *PLOS One*, 11(3), pp. 1–15.

Kamal, N., Curtis, S., Hasan, M.S. & Jamil, K. 2016. Trends in Equity in Use of Maternal Health Services in Urban and Rural Bangladesh. *International Journal for Equity in Health*, 15 (27), pp.1–11.

Kifle, D., Azale, T., Gelaw, Y.A., & Melsew, Y.A. 2017. Maternal Health Care Service-Seeking Behaviors and Associated FactorsAmong Women in Rural Haramaya District, Eastern Ethiopia: A Triangulated Community-Based Cross-Sectional Study. *Reproductive Health*, 14(1), #6. Available at: https://www.ncbi.nlm.nih.gov/pubmed/28086926.

Lama, S. & Aki, K. 2014. Barriers in Utilization of Maternal Healthcare Services: Perceptions of Rural Women in Eastern Nepal. *Kathmandu University Medical Journal*, 12(4), pp.253–258.

Lilungulu, A.G., Matovelo, D. &Gesase, A, 2016.Reported Knowledge, Attitude and Practice of Antenatal Care Services Among Women in Dodoma Municipal, Tanzania.*Journal of Pediatrics and Neonatal Care*, 4(1). Available at: https://medcraveonline.com/JPNC/JPNC-04-00125.

Limenih, M.A., Endale, Z.M. & Dachew, B.A., 2016. Postnatal Care Service Utilization and Associated Factors Among Women Who Gave Birth in the Last 12 Months Prior to the Study in Debre Markos Town, Northwestern Ethiopia: A Community-Based Cross-Sectional Study. *International Journal of Reproductive Medicine*, 2016, #7095352.

Available at: https://www.hindawi.com/journals/ijrmed/2016/7095352/.

Lincetto, O., Mothebesonne-Anoh, S., Gomez, P. & Munjanja, S. 2016. *Antenatal Care*. Available at: https://www.who.int/pmnch/media/publications/aonsectionIII_2.pdf.

Lunze, K., Higgins-Steele, A., Simen-Kapeu, A., Vesel, L., Kim, J. & Dickson, K. 2015. Innovative Approaches for ImprovingMaternal and NewbornHealth–A Landscape Analysis. *BMC Pregnancy and Childbirth*, 15(337), pp. 1-19. Available at: http://dx.doi.org/10.1186/s12884-015-0784-9.

Maternal and Child Health Integrated Program (MCHIP). 2012. *MCHIP Country Brief: Ethiopia*.

Available at:https://www.mchip.net/wp-content/uploads/2017/12/Ethiopia.pdf.

Mekuria, G.& Edris, M. 2015. Exclusive Breastfeeding and Associated Factors Among Mothers in Debre Markos, Northwest Ethiopia: A Cross-Sectional Study. *International Breastfeeding Journal*, 10(1), #1. Available at: https://www.ncbi.nlm.nih.gov/pubmed/25635183.

Medhanyie, A.A., Little, A., Yebyo, H., Spigt, M., Tadesse, K., Blanco, R. & Dinant, G.J. 2015. Health Workers' Experiences, Barriers, Preferences and Motivating Factors in Using mHealth Forms in Ethiopia. *Human Resources for Health*, 13(2), pp.1–10.

Mehari, K. & Wencheko, E. 2011. Factors Affecting Maternal Healthcare Services Utilization in Rural Ethiopia: A Study Based on the 2011 EDHS Data.*Ethiopian Journal of Health Development*, 27(1), pp. 1-24.

Memirie, S.T., Verguet, S., Norheim, O.F., Levin, C. & Johansson, J.J. 2016. Inequalities in Utilization of Maternal and Child Health Services in Ethiopia: The Role of Primary Healthcare. *BMC Health Services Research*, 16(51), pp.1–8. Available at: http://dx.doi.org/10.1186/s12913-016-1296-7.

*Merriam-Webster.*n.d.'Factor'.

Available at: https://www.merriam-webster.com/dictionary/factor.

Mosby's Medical Dictionary. 2009. 8th ed. Missouri, USA: Elsevier.

Moule, P. & Goodman, M. 2014. *Nursing Research*. UK: Sage Publications.

Mugo, N.S., Agho, K.E. & Dibley, M.J. 2014. Risk Factors for Non-Use of Skilled BirthAttendants in South Sudan Household Survey. *Maternal and Child Health Journal*, 20(6), pp. 1266-1279

Nigusu, M., Wondafrash, B., Segni, H. & Gurmessa, A. 2015. Knowledge, Attitude and Practice of Family Planning Methods Among Laboring Mothers in Adama Hospital, Oromia Region, Ethiopia. *Women's Health, Issues and Care*, 4(3). Available at: https://www.scitechnol.com/knowledge-attitude-and-practice-of-family-planning-methods-among-laboring-mothers-in-adama-hospital-oromia-region-ethiopia-cxjh.php?article_id=3303.

Nzioki, J.M., Onyango, R.O. & Ombaka, J.H. 2017. Socio-Demographic Factors Influencing Maternal and Child Health Service Utilization in Mwingi: A Rural Semi-Arid District in Kenya. *American Journal of Public Health Research*, 3(1), pp.21–30.

Ononokpono, D.N.&Odimegwu,C.O. 2014. Determinants of Maternal Health Care Utilization in Nigeria: A Multilevel Approach. *Pan African Medical Journal*, 17(S1:2), #24643545. Available at: https://www.ncbi.nlm.nih.gov/pubmed/24643545.

Oxford Dictionary.2016. London, UK: Oxford University Press.

Pay, A.S., Backe, B., Klovning, A. & Sand, S.2014.*Incidence / Epidemiology National Guidelines for Antenatal Care*.

Availableat:www.nfog.org/.../guidelines/1%20NGF%20Obst%20Antenatal%20care%2Backe.pdf.

Polit, D.F.& Beck, C.T. 2014. *Nursing Research: Principles and Methods*. 10thed. Philadelphia, USA: Lippincott Williams & Wilkins.

Rahman, M., Ngadan,P.&Arif,T. 2016.Factors Affecting Satisfaction on Antenatal CareServices in Sarawak, Malaysia: Evidence from a Cross-Sectional Study. Springerplus, 5(1), #725.

Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4909660/.

Sarfraz, M., Tariq, S., Hamid, S. & Iqbal, N. 2015. Social and Societal Barriers in Utilization of Maternal Healthcare Services in Rural Punjab, Pakistan. *Journal of Ayub Medical College Abbottabad*, 27(4), pp.843–849.

Sarker, B.K., Rahman, M., Rahman, T., Hossain, J., Reichenbach, L. & Mitra, D.K. 2016. Reasons for Preference of Home Delivery with Traditional Birth Attendants (TBAs) in Rural Bangladesh: A Qualitative Exploration. *PLOS One*, 11(1), pp.1–19.

Segen's Medical Dictionary. 2012. Available at:https://www.amazon.com/Dictionary-Modern-Medicine-J-C-Segen/dp/1850703213.

Shahram, M.S., Hamajima, N. & Reyer, J.A. 2015. Factors Affecting MaternalHealthcare Utilization in Afghanistan: Secondary Analysis of Afghanistan Health Survey 2012. *Nagoya Journal of Medical Science*, *77*(4), pp.595–607.

Shetty, P. 2014. More Midwives Needed to Improve Maternal and Newborn Survival. *Bulletin of the World Health Organization*, 2013(91), pp. 804-805. Available at: https://www.who.int/bulletin/volumes/91/11/13-021113/en/.

Singh, A. 2016. Supply-SideBarriers to Maternal Healthcare Utilization at Health Sub-Centers in India. *PeerJ*, 4, e2675.

Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5101621/.

Situ, K.C. 2013. Women' Autonomy and Maternal Health Care Utilization in Nepal. Master's thesis, University of Tampere.

Available:https://tampub.uta.fi/bitstream/handle/10024/94497/GRADU-1383036353.pdf?sequence=1.

Srivastava, A., Avan, B.I., Rajbangshi, P. & Bhattacharyya, S. 2015. Determinants of Women's Satisfaction with MaternalHealthcare: A Review of Literature from Developing Countries. *BMC Pregnancy and Childbirth*, 15(97),pp.1–12.

Tadele, N.& Lamaro, T. 2017. Utilization of Institutional Delivery Service and Associated Factors in Bench Maji Zone, Southwest Ethiopia: Community-Based, Cross-Sectional Study. *BMC Health Services Research*, 17(101), pp.1–10.

Tebekaw, Y., Mashalla, Y.J.& Thupayagale-Tshweneagae, G. 2015. Factors Influencing Women's Preferences for Places to Give Birth in Addis Ababa, Ethiopia. *Obstetrics and Gynecology International*, 2015, #439748.

Availableat:http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=4568048&tool=pmcentrez&rendertype=abstract.

Tesfaye, R., Worku, A., Godana, W. & Lindtjorn, B. 2016. Client Satisfaction with Delivery Care Service and Associated Factors in the Public Health Facilities of Gamo Gofa Zone, Southwest Ethiopia: In a Resource-Limited Setting. *Obstetrics and Gynecology International*, #5798068, 7 pages.

Available at: https://www.hindawi.com/journals/ogi/2016/5798068/.

The Federal Democratic Republic of Ethiopia. 1993. *Health Policy of the Transitional Government of Ethiopia*. Ethiopia: The Federal Democratic Republic of Ethiopia.

The Federal Democratic Republic of Ethiopia: Ministry of Finance and Economic Development (MoFED). 2010. *The Federal Democratic Republic of Ethiopia Growth and Transformation Plan (GTP) 2010/11-2014/15*.

Available at: http://www.ethiopians.com/Ethiopia_GTP_2015.pdf.

The National Collaborating Centre for Primary Care. 2006. *Postnatal Care: Routine Postnatal Care of Women and Their Babies*.

Available at: https://www.ncbi.nlm.nih.gov/pubmed/21834192.

The Open University. 2018. *Postnatal Care Module: 1. Postnatal Care at the Health Post and in the Community*.

Availableat:http://www.open.edu/openlearncreate/mod/oucontent/view.php?id=335&printable=1.

Tsawe, M., Moto, A., Netshivhera, T., Relesego, L., Nyathi, C.& Susuman, A.S. 2015. Factors Influencing the Use of Maternal Healthcare Services and Childhood Immunization in Swaziland. *International Journal for Equity in Health*, 14(32), pp. 1–11.

Ugboaja, J.O., Berthrand, N.O., Igwegbe, A.O. & Obi-Nwosu, A.L. 2013. Barriers to Postnatal Care and Exclusive BreastfeedingAmong Urban Women in Southeastern Nigeria. *Nigerian Medical Journal*, 54(1), pp. 45–50.

United Nations (UN). n.d. *Sustainable Development Goals*. Available at: https://sustainabledevelopment.un.org/?menu=1300.

United Nations (UN). 1995. *Report of the International Conference on Population and Development*. USA: United Nations Publications.

United Nations (UN). 2013. *The Millennium Development Goals Report 2013*. USA: United Nations. Available at: http //www.un.org/millenniumgoals/pdf/report-2013/mdg-report-2013-english.pdf.

United Nations (UN). 2015. *The Millennium Development Goals Report: 2015*. Available at: http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf.

United Nations International Children's Emergency Fund (UNICEF). 2013. *Innovative Approaches to Maternal and Newborn Health: Compendium of Case Studies*. Available: https://www.unicef.org/health/files/Innovative_Approaches_MNH_CaseStudies-2013.pdf.

United Nations International Children's Emergency Fund (UNICEF). *Annual Report 2017*. Available at:https://www.unicef.org/supply/files/Unicef_Annual_report_2017.pdf.

United States Agency for International Development (USAID). 2012. *USAID/Ethiopia: End of Project Evaluation for the Urban Health Extension Program*. Washington, DC., USA: GH Tech Bridge Project.

United States Agency for International Development (USAID) 2018.*Acting on the Call: A Focus on the Journey to Self-Reliance for Preventing Child and Maternal Deaths*. Available at: https://www.usaid.gov/sites/default/files/2018ActingontheCall_508.pdf.

Varghese, S.,Singh, S., Kour, G.& Dhar, T.2016. Knowledge, Attitude and Preferences of Pregnant WomenTowards Mode of Delivery in a Tertiary Care Center. *International Journal of Research in Medical Sciences*, 4(10), pp.4394–4398.

Vidler, M., Ramadurg,U., Charantimath, U., Katageri, G., Karadiguddi, C., Sawchuck, D., Qureshi, R., Dharamsi, S., Joshi, A., Von Dadelszen, P., Derman, R., Bellad, M., Goudar, S., Mallapur, A. & The Community Level Interventions for Pre-Eclampsia (CLIP) India Feasibility Working Group. 2016. Utilization of Maternal Health CareServices and Their Determinants in Karnataka State, India. *Reproductive Health*,13 (S1),#37.

Available at: https://www.ncbi.nlm.nih.gov/pubmed/27356502.

Weldearegay, H. 2015.Factors Affecting Choice of Place for Childbirth Among Women in Ahferom Woreda, Tigray. *Journal of Pregnancy and Child Health*, 2(133). Available at: https://www.omicsonline.org/open-access/factors-affecting-choice-of-place-for-childbirth-among-womens-in-ahferom-woreda-tigray-jpch.1000133.php?aid=37279.

World Bank. 2015. *Maternal Mortality Ratio*.

Available at: data.worldbank.org/indicator/SH.STA.MMRT.

World Health Organization (WHO). 1981. *Global Strategy for Health for All by the Year 2000*. Available at: http://whqlibdoc.who.int/publications/9241800038.pdf.

World Health Organization (WHO). 2009. *Proportion of Births Attended by a Skilled Health Worker: 2009 Updates.*

Available at:http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/2009_skilled_attendant.pdf.

World Health Organization (WHO). 2013a. *Health Topics: Maternal Health*. Available at: http://www.who.int/topics/maternal_health/en/.

World Health Organization (WHO). 2013b. *Postnatal Care of the Mother and Newborn*. Available at: apps.who.int/iris/bitstream/10665/97603/1/9789241506649_eng.pdf.

World Health Organization (WHO). 2015a. *Global Health Observatory Data*. Available at: https://www.who.int/gho/en/.

World Health Organization (WHO). 2015b.*Postnatal Care for Mothers and Newborns: Highlights from the World Health Organization 2013 Guidelines*. Available at:http://www.who.int/maternal_child_adolescent/publications/WHO-MCA-PNC-2014-Briefer_A4.pdf.

World Health Organization (WHO). 2015c. *Strategies Toward Ending Preventable Maternal Mortality (EPMM)*.

Available:https://www.who.int/reproductivehealth/topics/maternal_perinatal/epmm/en/.

World Health Organization (WHO). 2016. *Maternal Health 2016*. Available at:www.who.int/life-course/news/events/lancet-series-maternal-health-2016/en/.

World Health Organization (WHO), United Nations International Children's Emergency Fund (UNICEF), United Nations Fund for Population Activities (UNFPA)& The World Bank. 2005. *Maternal Mortality in 2005*.

Available at: https://www.who.int/whosis/mme_2005.pdf.

World Health Organization (WHO),United Nations International Children's Emergency Fund (UNICEF), United Nations Fund for Population Activities (UNFPA), The World Bank & The United Nations Population Division.2014. *Trends in Maternal Mortality 1990 to 2013*.

Available at: https://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2013/en/.

World Health Organization (WHO), United Nations International Children's Emergency Fund (UNICEF), United Nations Fund for Population Activities (UNFPA), The World Bank &The United Nations Population Division. 2015. *Trends in Maternal Mortality 1990 to 2015*. Available at: https://www.afro.who.int/sites/default/files/2017-05/trends-in-maternal-mortality-1990-to-2015.pdf.

Zakerihamidi, M., Roudsari, R.L. & Merghati, E. 2015. Vaginal Delivery vs. Cesarean Section: A Focused Ethnographic Study of Women's Perceptions in the North of Iran. *International Journal of Community-Based Nursing and Midwifery*, 3(1), pp.39–50.

Zamawe,C.F. 2013.The Role of the Parents' Perception of the Postpartum Period and Knowledge of Maternal Mortality in Uptake of Postnatal Care: A Qualitative Exploration in Malawi. *International Journal of Women's Health*, 7, 587–594.

ANNEXURES

Annexure A: Letter of approval to conduct field work

Qafar Agatih Rakaakayih Doolatak
Qaafiyat Dacayrih Biiro

The Afar National Regional State
Bureau of Health

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Ayro/ቀን 20/04/10

Wagtah yan xagortih inkih

Caagid: **<u>qokol wagittaama</u>**

Dagah amol kah inneh nan innah university of South Africa (UNISA)' xiqsitta barittoh buxal bartah yan gifta geetachew wolxe yohannis sin duquaral ***"Factors affecting maternal health care services utilization of woman in Awash fentale woreda"*** sidic haytoh digrih kusaq elle abamaay faxa.

Tonna kinnuk isin usug abah yan kusaq sarrah qaafiyatal Cato akkeleemih taagah qokol kah abtaanam sin kassisna.

Ninni qaafiyatah ittalluk tamimay

Wassiq Saddik Moc.
ዋሲቅ ሳዲቅ መሀመ

Tel. 033-666-00-15/16/17/18/20/21/22/23 Fax 033-666-03 85 P.O.Box 26 Semera – Afar

Gacsal ni ayyufti ixxima makabbaalina! እባክዎን መልስ ሲጽፉ የኛን ደብዳቤ ቁጥር ይጥቀሱ!

In Reply please refer our Ref.No.! Email Address:-

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Annexure B: Permission for data collection

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የዞን 3 መስተዳደር ምክር ቤት
አዋሽ ጤና አጠባበቅ ጣቢያ
Afar National Regional State
Zone 3 Administrative Council
Awash Health Center

Reference No. A/HIC/719/10

Date 30/12/2017

To Mr. Getachew Weldeyohannes Tedla

Subject: Giving permission for data collection

We would like to inform you that we have already accepted your request to collect data from our Health Center (**Awash Health center**) and its catchment areas for the fulfillment of your Doctoral degree.

With Regards;

Hayilu Sisay

የአዋሽ ጤና አጠባበቅ ጣቢያ ኃላፊ
Awash Health Centre Head

Annexure C: Ethical clearance

UNISA university of south africa

15 DECEMBER 2017

UNISA-ET/KA/ST/29/15-12-17

AFAR REGIONAL HEALTH BUREAU

SEMERA

Dear Madam/Sir,

The University of South Africa (UNISA) extends warm greetings. By this letter, we want to confirm that Mr. Getachew WoldeYohannes Tedla (student number 58545123) 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 "***Factors affecting maternal health care services utilization of women in Awash Fentale Woreda"***.

This is therefore to kindly request you to assist the student in any way that you can. Attached, please find the ethical clearance that he has secured from the Department of Health Studies (UNISA).We would like to thank you in advance for all the assistance that you will provide to the student.

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Sincerely,

Dr. Tsige GebreMeskel Aberra

Deputy Director – Academic and ICT Support

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Annexure D: Letter of request to conduct research in Awash Fentale woreda of Afar National Regional State

To: Bureau of Health
Afar National Regional State
Semera, Ethiopia

Re: Request for approval to conduct research

I am Getachew Weldeyohannes Tedla, a registered PhD student at the University of South Africa (UNISA). I am requesting permission to conduct a study on **"Factors influencing maternal health care services utilization by women in Awash Fentale woreda of Afar National Regional State, Ethiopia**."

The main aim of this research is to assess the factors influencing maternal heath care services utilization by women in Awash Fentale woreda of Afar National Regional State, Ethiopia. It is expected that the findings from the study will inform program designers and stimulate formulation of appropriate measures to improve maternal health outcomes in the study area.

Sincerely,

Getachew WeldeyohannesTedla

Addis Ababa, Ethiopia

Annexure E: Informed consent form

Title of the project: Factors influencing maternal health care services utilization by women in Awash Fentale woreda of the Afar National Regional State, Ethiopia

Dear respondent: my name is _____and I am here on behalf of a registered Public Health Expert (student) named Mr. Getachew Weldeyohannes Tedla, who is conducting research for his PhD degree at the University of South Africa (UNISA). I am collecting data for his research, which focuses on the assessment of factors influencing maternal healthcare of women seeking maternal healthcare services. Your household is selected for the study. We would appreciate your assistance in completing this questionnaire. The information you will provide may not have a direct benefit to you now but is extremely important to inform policy makers and program designers for stimulating discussion about formulation of appropriate measures to ensure quality in maternal healthcare in Awash Fentale woreda of Afar National Regional State.

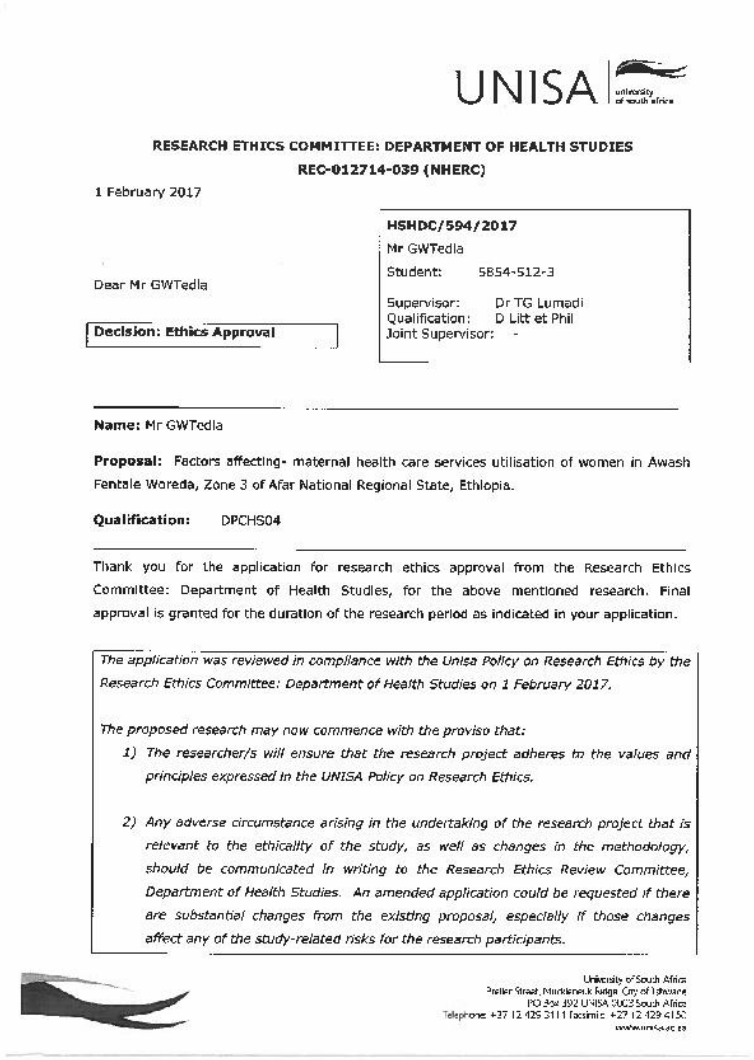
The proposed study does not involve any intrusive procedures, therefore you will not be exposed to either physical or psychological harm if you decide to participate in the research project. Your name will not be documented on the questionnaire and the information you give will be kept strictly confidential and will not be shared with anyone without your consent. You are free not to accept to participate in the study and you are free to withdraw from the study at any time without any consequences.

The interview will last less than 45 minutes. You have the right not to answer any question(s) that you are not comfortable about.

Do you have any question that you wish me to clarify? If at any time you have any questions to ask, contact:

Mr. Getachew Weldeyohannes Tedla
Jemo, Nifas Silk Lafto SC.
Addis Ababa, Ethiopia Cell phone: +251 911 065580
E-mail: gechwy2001@yahoo.com
Are you willing to participate in the study? Yes / No
If you are willing to participate in the study, please sign here:
Thank you for your time.

Annex F: Ethical Clearance



UNISA

RESEARCH ETHICS COMMITTEE: DEPARTMENT OF HEALTH STUDIES
REC-012714-039 (NHERC)

1 February 2017

HSHDC/594/2017
Mr GWTedla
Student: 5854-512-3

Supervisor: Dr TG Lumadi
Qualification: D Litt et Phil
Joint Supervisor: -

Dear Mr GWTedla

Decision: Ethics Approval

Name: Mr GWTedla

Proposal: Factors affecting- maternal health care services utilisation of women in Awash Fentale Woreda, Zone 3 of Afar National Regional State, Ethiopia.

Qualification: DPCHS04

Thank you for the application for research ethics approval from the Research Ethics Committee: Department of Health Studies, for the above mentioned research. Final approval is granted for the duration of the research period as indicated in your application.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Research Ethics Committee: Department of Health Studies on 1 February 2017.

The proposed research may now commence with the proviso that:

1) *The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*

2) *Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Research Ethics Review Committee, Department of Health Studies. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*

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Annexure G: Structured Questionnaire Focusing on Factors Influencing Maternal Health Care Services Utilization by Women in Awash Fentale woreda, Ethiopia

IDENTIFICATION

Case identification number: _____

Name of sub-city:_____

Name of woreda/kebele: _____

Name of locality: _____

Name of enumeration area:_____

Household number: _____

Date of first visit to household (dd/mm/yyyy)_____ _____

Date of second visit to household (dd/mm/yyyy): _____ _____

Interviewer's name and signature: _____ _____

Supervisor's name and signature: _____ _____

Questionnaire status at the end of interview (to be confirmed by researcher):
1.Complete
2.Incomplete Skip

SECTION1: BACKGROUND INFORMATION			
S.NO	**ITEMS**	**RESPONSE**	**SKIP**
101	How old were you at your last birthday?	Age in completed years _____ years	
102	Have you ever attended school?	1. Yes → 2. No	104
103	Have you ever participated in a basic education program or any other program that involves learning to read or write?	1. Yes 2. No →	105
104	What is the highest grade you have completed?	1. Tech/Voc. Certificate 2. University/college diploma 3. University/college degree or above	
105	What is your current marital status?	Married 1 Living together /cohabiting 2 Never married 3 Widowed 4 Divorced 5	→ 109
106	What is the highest grade your husband completed?	No education 99 Grade _____ Tech/Voc. Certificate 13 University/College diploma 14 University/College	

		degree15	
107	What is your husband's/partner's occupation?	Not employed 0 → 109 Government employee 1 NGO 2 Private employee 3 Self-employed 4 Other 5	
108	What is your husband's/partner's average monthly income (ETB)?	_____	
109	What is your current job?	Not employed 0 → 111 Government employee 1 NGO 2 Private employee 3 Self-employed 4 Other 5	
110	What is your average monthly income(in birr)?	_____	
111	What is your religion?	Orthodox Christianity 1 Islam 2 Protestant 3 Catholic 4 Traditional belief 5 Other(specify) 6 Protestant 7	
112	What is your ethnicity? [Code will be given by the researcher during data entry]	Specify	

SECTION 2: HOUSEHOLD INFORMATION			
Now, I will ask you some questions regarding your household			
201	How many members are in your household? (Household=people staying together	_____	

202	Does your household have electricity? Radio? Television? Telephone? (mobile/fixed)? Personal computer (laptop/desktop)? Internet? Refrigerator?	Yes No 1 2 1 2 1 2 1 2 1 2 1 2 1 2	
203	Does anyone in your household own: A Bajaj (three-tyre motorbike) Animal-drawn cart? Car/truck?	Yes No 1 2 1 2 1 2 1 2	
204	Who owns the house in which you are living?	Own house 1 Rental from private 2 Rental from govt.3 Dependent 4 Other(specify) 5	
205	How many sleeping (bed) rooms do you have for the household members?	_____	
206	Main floor material (observe) (Finished-polished wood, asphalt ceramic, cement & carpet)	Natural (earth/sand) 1 Rudimentary (wood/bamboo) 2 Finished floor 3 Other (specify) 4	
207	Main material of the roof observe (Finished roofing-corrugated iron/metal, wood, wood, cement,	Natural roofing (no roof/leaf) 1 Rudimentary (plastic/bamboo/wood) 2	

	concrete)	Finished roofing 3 Other (specify) 4	
208	Main material of the exterior wall(observe) (Natural wall, if no wall, or cane/trunks/bamboo/reed or dirt)	Natural wall (no wall/reeds/dirt) 1 Rudimentary wall 2 Finished wall 3 Other (specify) 4	
209	What is the main source of drinking water for your household?	Tap water (piped into house or yard) 1 Protected dug well/spring/rain 2 Public tap 3 Other(Specify 4	
210	What kind of toilet facility do members of your household use?	Pour flush latrine (private or shared) 1 Pit latrine (private or shared) 2 Public toilet 3	

SECTION3: MATERNITY AND MATERNAL HEALTHCARE			
301	How many living children do you have?	Number of living children_____	
302	Is your last-born child alive?	Yes 1 No 2	
303	When was the date of birth for your last child?	Date of last birth _____ Don't know99	
304	At the time you became pregnant	Wanted by then 1 Wanted later 2	

	for the last birth, did you actually want to become pregnant then, did you want to wait until later, or did you not want to have any(more) children at all?	Wanted no more children 3	
305	Did you see anyone for antenatal care during/for your last pregnancy/birth?	Yes 1 No 2 → 319	
306	Whom did you see for the ANC follow-up?	Yes No	
	Physician/health officer	1 2	
	nurse/midwife	1 2	
	health extension worker/	1 2	
	traditional birth attendant	1 2	
	Other(specify)	5	
307	How many months pregnant were you when you first received ANC for this last pregnancy?	_____ Don't remember 99	
308	How many times did you receive ANC during this pregnancy?	_____ Don't remember 99	
309	Where did you receive ANC for this pregnancy?	Public hospital 1 Public health center 2 Public health post 3	

310	(Type of private health facility will be verified by enumerators during data collection or by the researcher) What were the reasons for you to choose the above service provider?(This doesn't work for those who received their ANC at home) Short distance Short waiting time Experienced low cost of service Perceived low cost of service Perceived good quality of service experienced Husband's influence Family influence Friend's influence Other(specify)	Private for-profit health facility4 Private not-for-profit (hospital/clinic 5 Private / other (specify) 6 Yes No 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 8	
311	Were any of the following done for you at least once as part of your ANC during this pregnancy? Were you asked about	Yes No Don't	

	previous history of:	remember	
	Still births	1 2 9	
	Death of infant in the first week of life	1 2 9	
	Heavy bleeding during or after delivery	1 2 9	
	Assisted delivery (cesarean section, forceps)	1 2 9	
	Abortion (any type)	1 2 9	
	Examination or procedure was done by the provider:	1 2 9	
	Weight measured	1 2 9	
	Height measured	1 2 9	
	Blood pressure measured	1 2 9	
	Fetal heartbeat listened to	1 2 9	
	Uterine height measured	1 2 9	
	Uterine sample taken	1 2 9	
	Blood	1 2 9	
	sample taken	1 2 9	
	Perform or refer for anemia test	1 2 9	
	Syphilis test	1 2 9	
	HIV counseling/referred	1 2 9	
	HIV test/referred		
	Checked client card		

312	During this pregnancy [interventions]: Were you given an anti-tetanus injection in the arm? Were you given or did you buy/get any iron tablets? Did you receive any medication for intestinal parasites? Did you take any anti-malaria drugs? Were you advised about: Exclusive breastfeeding? The benefits of breastfeeding? The benefits of family planning?	Yes No Don't know 1 2 9 1 2 9 1 2 9 1 2 9 1 2 9 1 2 9 1 2 9	
313	During your antenatal follow-up, did the provider ask you where you would like to deliver?	Yes 1 No 2 Don't remember 9	
314	Did the provider advise you to deliver at a healthcare facility?	Yes 1 No 2 Don't remember 9	

315	How much does a single antenatal visit cost you in your client healthcare facility?[Doesn't include transportation fee]	Amount in ETB _____	
316	During (any of) your antenatal care visit(s), were you counseled about the danger signs or complications of pregnancy?	Yes 1 No 2 Don't know 9	
317	What are the common danger signs of pregnancy? Fever Swelling of hands and faces Abdominal pain Severe headache Vaginal bleeding Blurred vision Breathlessness Reduced baby movement Other (specify)	Yes No Don't remember 1 2 9 1 2 9 1 2 9 1 2 9 1 2 9 1 2 9 1 2 9 1 2 9 8	
318	What are the common complications of pregnancy and/or delivery? High blood pressure	Yes No Don't remember 1 2 9 1 2 9	

	Convulsions Postpartum hemorrhage Prolonged labor Stillbirth Other(specify)	 1 2 9 1 2 9 1 2 9 3	

QUESTIONS REGARDING DELIVERY SERVICES			
319	Where did you deliver your last child? [Not-for-profit, e.g. NGO clinics] _____ Name of healthcare facility	Home 1 Public health facility 2 Private for-profit 3 Private not-for-profit 4 Other(specify) 5	321 →
320	Why did you not deliver at a healthcare facility?	Yes NO	
	High cost of service	1 2	
	Long distance	1 2	
	Long waiting time	1 2	
	No complications experienced	1 2	
	Don't trust facility	1 2	
	Unavailability of equipment	1 2	
	Unavailability of drugs	1 2	
	Unavailability of quality service	1 2	

	Husband did not allow Family did not allow Friend's influence Previous bad experience in healthcare facility Little respect from healthcare workers Lack of privacy Fear of operation Facility closed(off working hours not necessary) Other(specify)	1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 5	
321	Who attended your delivery at the healthcare facility?	Gyne-Obstetrician (specialist)1 Physician 2 Nurse/midwife 3 Health extension worker4 Traditional birth attendant 5 Other(specify) 6	
322	What was the mode of delivery for your last birth?	Vaginal delivery 1 Cesarean section 2	
323	How much does it cost you to go to the healthcare facility(one way)?	Total amount (ETB) _____ Don't know 999	
324	How long does it take you to go to	Minutes/hours _____	

	the healthcare facility from your house? (Let the respondent use either minutes or hours)	Don't know 999	
325	Did any organization pay some or all of your expenses for ANC or DC (insurance or similar program)?	Yes 1 No 2	
326	In total, how much did you pay for all services or treatments you received during last delivery at the healthcare facility?(Include any payment like lab, medicine, etc.; exclude prices for ultrasound and caesarian section, if any)	Total amount _____ Don't know 99999	
327	How did you pay for the services that you received at the facility?	Free of charge 1 Out of pocket(cash credit) 2 Credit 3 Other(specify) 4	
328	Did you visit any healthcare facility	Yes 1	

	within two days after your last delivery for postnatal care ?If your answer is no, why did you not attend postnatal care? High cost of service Long distance Long waiting time No complications experienced Unavailability of quality service Do not trust facility Husband did not allow Family did not allow Friend's influence Previous bad experience at a healthcare facility Little respect from healthcare worker Other (specify) Do you think that postnatal care is important?	No 2 Don't remember 8 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 5 1 2	
329	Thinking about the maternity	Yes No Don't remember	

	healthcare service you received during your time in the healthcare facility, were you satisfied with: The care and attention you got from staff The attitude of the healthcare personnel The cleanliness of the healthcare facility The amount of privacy you had The medication you were provided	1 2 9 1 2 9 1 2 9 1 2 9 1 2 9	

SECTION4: OTHER HEALTH-RELATED ISSUES			
401	Who in your family has the final say on your healthcare?	Respondent alone 1 Respondent and partner jointly 2 Respondent and other person 3 Husband or partner alone 4 Someone else 5	
402	How often do you reada newspaper or magazine?	Almost every day 1 At least once a week 2 Less than once a week 3 Not at all4	
403	How often do you listen to the radio?	Almost every day 1 At least once a week 2	

		Less than once a week 3 Not at all4	
404	How often do you watch television?	Almost every day 1 At least once a week 2 Less than once a week 3 Not at all4	
THANK YOU SO MUCH FOR YOUR COOPERATION.			