ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCE
SCHOOL OF PUBLIC HEALTH

ASSESEMENT OF MATERNAL HEALTH LITERACY AND ITS DETERMINANTS AMONG PREGNANT WOMEN IN AMHARA REGION, NORTHERN ETHIOPIA

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This thesis, by Finina Abebe is accepted in its present form by the board of examiners as fulfilling for the degree of master's in public health nutrition.

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Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF ANNEX

LIST OF ABRRIVATION AND ACCRONMY

ANC	Antenatal care
BP	Blood pressure
BPCR	Birth preparedness and complication readiness
EDHS	Ethiopian demographic and health survey
EMDHS	Ethiopian mini demographic and health survey
FANC	Focused antenatal care
FMOH	Federal ministry of health
HEW	Health extension worker
HL	Health literacy
IFA	Iron folic acid
LMIC	Low and middle income countries
MDG	Millennium development goal
MENA	Middle east and north Africa
MHC	Maternal health care
MHL	Maternal health literacy
MMR	Maternal mortality rate
NVS	newest vital sign
PNC	Post natal care
REALM	Rapid estimate of adult literacy in medicine
SDG	Sustainable development goal
SSA	Sub Saharan Africa
TBA	Trained birth attendant
TOFHLA	Test of functional health literacy in adults
UTB	Untrained birth attendant

ABSTRACT

Background- Maternal health literacy is a set of cognitive and social skills that define a woman's motivation and capacity to obtain, comprehend, analyze, and apply knowledge to recognize risk factors, taking actions for healthier life style and proper nutrition during pregnancy in order to achieve positive health outcomes for herself and her children. Maternal health literacy is associated with poor health outcomes among women and their children, especially in low-income areas. Therefore this study aims to assess maternal health literacy and its determinants on pregnant women attending in the antenatal care.

Method- Facility based cross-sectional study was done at health facilities in west Gojam and southern Gondar zone. Data was collected from 327 pregnant women who came to health facilities for antenatal care. Interviewer administered questionnaires were employed to collect data. Frequencies, proportion, were used to describe findings. Crude odds ratios and 95% confidence intervals were considered to measure associations for each variable with the maternal health literacy. Multivariable logistic regression was run to identify determinants of maternal health literacy by controlling possible confounders. Assumption of goodness of fit was checked and Statistical significance was determined at $p<0.05$.

Result- A total of 327 pregnant women participated in the study with a response rate of 99.09%. Maternal health literacy among pregnant women in this study was 54.1%. The respondents Self-care domain score was 54.1%, danger sign and birth preparedness domain score was 61.8%, breast feeding and family planning domain score was 64.2%. Statistically significant associations were documented with residence, AOR=2.66, 95% CI: =2.66, (1.05, 6.71) source of health related information (AOR= 19.1, 95% CI: 1.33, 7.42), formal school attendance (AOR=2.45, 95%CI: 1.04, 5.61), gestational age (AOR=3.44, 95%CI: 1.04, 11.4) and parity (AOR=2.66, 95%CI: (1.03, 6.86).

Conclusion and Recommendation - our findings showed that women in the study are predisposed to maternal health risks due to their low level of maternal health literacy .antenatal care units which are visited almost by all pregnant women at list once could be used as good platform. Assessing maternal health literacy needs in antenatal care unit and integrating health education that improves maternal health literacy in antenatal care services is very essential.

1. INTRODUCTION

1.1 Background

Health literacy is a very important determinant of Health in a community.(1) The definition Health literacy has evolved from the ability to read and comprehend health-related information to include the domains of functional, communicative, and critical literacy.(2) health literacy is defined as the cognitive and social skills which determine the motivation and ability of individuals to gain access to understand and use information in ways which promote and maintain good health.(3) Health literacy also encompasses the ability to perceive and use information provided by health professionals, as well as the ability to read and comprehend doctor's prescriptions and instructions, testimonials, booklets, and drug brochures, as well as the ability to obtain health services.(4)

Health literacy required for pregnant women to understand health care information and to making informed health decisions is known as Maternal health literacy ,which is a set of cognitive and social skills that determine women's motivation and ability to a gain access, understand, interpret and use knowledge to achieve positive health outcomes for them and their children .(5)Ability to detect pregnancy period risk factors, taking actions for a healthier lifestyle and proper nutrition during pregnancy, better adaptation to pregnancy changes, and care during pregnancy complications are all examples of maternal health literacy and specific cognitive and social skills required for a healthy maternity.(6) Maternal health literacy is also one of the key factors in predicting pregnancy outcome. By empowering women to engage fully in making informed choices about their health before, during and after birth (6-8). Antenatal care is an important opportunity and also a main entry for a healthy maternity to educate pregnant women on a variety of issues related to pregnancy, birth and parenthood to in order to promote the health and survival of both the mother and the baby.(9, 10) Antenatal Education also helps expectant parents to improve their knowledge, expertise and confidence in the planning and preparation of childbirth.(9) Through the years World health organization has recommended different approach for antenatal care in order to decrease maternal mortality .(10)Early on it had increased number of Antenatal visit then Focused antenatal care approach was introduced with four Antenatal for low risk pregnancy. (11)Recently WHO has revised the approach , the current guide suggests a minimum of eight contacts between the pregnant woman and the healthcare providers .(12)

1.2 Statement of the problem

Lack of health literacy is a universal problem that affects people's ability to recognize and understand health conditions, as well as their interactions with the healthcare system.(2, 3) It also contributes to disease, disparities, and mortality, as well as lower use of preventive services and higher use of medical services, resulting in higher health-care costs .(13) Pregnant women with low health literacy are unable to fully comprehend the range of services that a health system can provide for them and their families. (14) they also continue to be hesitant of when to seek attention for problems they observe in themselves or their newborn infants, which delays treatment or leads to poor health outcomes.(15) Without an adequate understanding of health care information, a woman's ability to engage in health promotion and prevention activities for herself and her children is limited; it becomes difficult, if not impossible, for a woman to make informed decisions that will result in satisfactory health care outcomes for herself and her family.(16) Especialy, In sub-Saharan countries where most pregnancy related deaths and injuries are prevalent Accounting for 99 percent of maternal deaths worldwide, antenatal care has been a lost prospect for health interaction.(17, 18) Like other sub–Saharan countries, Ethiopia also carries a higher burden of maternal deaths with a reported maternal mortality ratio of 412 deaths per 100,000 live births maternal health literacy assessment is very critical.(19)

Because,Maternal health literacy does not only impact her health care outcomes, but her children's or unborn child's health as well.(16) Maternal health literacy is recently more recognized as a crucial area of priority for women's reproductive health in order to reduce disparities, mortality, and achieve improved health outcomes.(20, 21) although many studies have been conducted to investigate the association between health literacy and health outcomes, very few studies on maternal health literacy have been completed in low-middle-income countries and sub-Saharan Africa.(22, 23)

Despite this rising recognition of the importance of maternal health literacy in maternal health, studies are not conducted to examine association between maternal health literacy and its determinant in Ethiopian context and Because health maternal literacy have an impact on many aspects of maternal health, it is critical to examine maternal health literacy and its determinants among pregnant women. Therefor, this study will assist to address this gap in the literature by assessing maternal health literacy and its determinants. It will also be useful in providing knowledge as a foundation for bases research as well as policy and program planning for improving maternal health literacy through antenatal care.

1.3 Significance of the study

The study aims to generate knowledge on maternal health literacy and its determinants. The study will also provide more insight on the needs of women that use antenatal services regarding maternal health literacy. It can assist health care providers in an understanding on how to best transfer antenatal care messages to mothers so that pregnant women could have adequate maternal health literacy.

The findings of this study will also contribute for development of successful strategies for intervention to enhance maternal health literacy. It will also help policy makers, health programmers, and maternal health workers design evidence-based programs and develop targeted antenatal care interventions which are understandable, convenient, and meaningful for pregnant women in their levels of maternal health literacy. In turn, this would lead to decreased risks in maternal health and better pregnancy outcomes. This study can also help the research community by assessing maternal health literacy and it can provide information as a reference point for future studies.

2. LITERATURE REVIEW

2.1 Burden of Maternal Mortality

Maternal mortality remains a global challenge with 303,000 dying as a result of pregnancy and childbirth-related complications worldwide (12) .Reduction of maternal mortality has been a part of both (MDGs) and (SDGs). Despite the reported 44% reduction achieved under the MDG, maternal mortality still remains a major global health issue today. It has been indicated that most of these deaths occur in LMIC, accounting for 94% of maternal mortality (24-26)**.**

According to the World Bank 2017, the MMR for high-income countries is 11 per 100,000 live births, while for low-income countries it is 230 per 100,000 live births. The majority of maternal deaths occur in sub-Saharan countries, accounting for 534 per 100,000. The lowest count happens in Europe, and Central Asia: 13 per 100,000 live births(27). Like most Sub-Saharan African countries, Ethiopia carries a high burden of maternal deaths. Trends of maternal mortality in Ethiopia during 1990–2013 showed that there was a decline from 708 per 100,000 live births in 1990 to 497 per 100,000 in 2013. but the number still remains unacceptably high with a reported MMR of 412 deaths per 100,000 live births(28) .

This has been mostly attributed to lack of access to health centers as well as unmet needs for family planning by reproductive-aged women within the country(26) .Many studies have indicated that most maternal deaths are preventable with the provision of timely and appropriate healthcare services(29) . Likewise in Ethiopia, ante-natal and post-natal follow-ups along with delivery in healthcare facilities have been found to be instrumental in the reduction of maternal mortality(26) .

2.2 Antenatal care and antenatal components

WHO has recommended ANC for all pregnant women worldwide (30).In order to minimize maternal mortality, over the years WHO has introduced numerous ANC models Starting from traditional approach with increased number of antenatal visits then focused antenatal care which is a goal oriented and reduced contact number at four critical times during pregnancy (11). The strategy has recently been updated by the WHO, with the latest guide suggesting at least eight interactions between a pregnant woman and the healthcare providers in order to maximize pregnancy outcomes. In addition to increased contact, the guideline incorporates many other improvement to the previous antenatal care model.(12) (31, 32) .

In 2016 new antenatal care method called group antenatal care was proposed by the WHO to groups of women at similar stages of pregnancy (10, 33) Despite the WHO recommendations for ANC globally, only 62% of pregnant women attend four or more ANC visits worldwide. For developing countries, the figure is much lower,, accounting for 55% attendance of the WHO-recommended four-ANC visits(34). Only 31.8% of mothers received four or more ANC visits, in 2016 EDHS survey and 37.1% of pregnant women received no ANC at all (19).

Various studies indicate that antenatal care is the most suitable platform for providing information and education to pregnant women on pregnancy-related issues, contributing to better pregnancy outcomes (29). The content of antenatal care prepares women to navigate pregnancy and childbirth and manage health decisions; In this regard, pregnant women must routinely visit antenatal services to experience favorable pregnancy outcomes(35, 36) .early pregnancy recognition is also a way of enhancing birth outcomes that encourages women to access antenatal care at a critical stage in pregnancy(37) .

A cross sectional survey done in Gambia comparing urban and rural ANC services suggests that ANC is Bing underused for delivering health communication and education in the health facilities (17). A study conducted in Burkina, Ghana, and Tanzania on ANC consultation reveals that only 5.4% of women in Burkina Faso, 30 % in Ghana and 22.5% in Tanzania were advised on all seven danger signs. The results of study suggest that ANC counseling on danger signs is not given enough emphasis (38) .

A study conducted among pregnant women in Tanzania receiving ANC indicates that the average contact period with health care provider for pregnant women was 10 minutes to 12 minutes For the first Visit and 6.5 minutes for subsequent visits; and 42 percent of clients were unaware of any signs of pregnancy risk among those using ANC service (39).

A study in Arsi, Oromia Region, Ethiopia, showed only 16.5% of the respondents were prepared for birth and its complications, indicating that birth preparedness and complication readiness awareness and practices are low in this region (40) . In addition, in a study conducted in Ethiopia to examine the practice and factors associated with birth preparedness and complication readiness, using five indicators ,identified a skilled birth attendant for delivery, identified a facility for emergency care, arranged transport for delivery, saved money, and identified a blood donor) results showed only 17% of pregnant women to be well prepared (41) . Similarly, a meta-analysis done in Knowledge and practice on obstetric danger signs in Ethiopia suggested that the level of danger signs recognition showed variations between their stages in pregnancy: 48% during pregnancy, 43% during delivery and 32% during postpartum(42).

2.3 Literacy

Literacy is recognized as a significant contributing health factor. Global and local attempts have been made to improve literacy over the years (43). report from developing countries highlight the positive impact of literacy on health and suggest that a lack of literacy contributes significantly to disease and economic differences(44).Globally the percentage of illiterate adults has decline (45) . According to the report of World Bank in 2015, the world illiteracy rate was 14 % among world population older than 15 years. However, wide gaps remain, particularly between sub-Saharan Africa and the rest of the world. In many developed countries, more than 95% have basic literacy skills, while most illiterate people live in sub-Saharan countries (46).

According to a 2016 Ethiopian Demographic Health Survey (EDHS) 2016, men are better educated than women. The illiteracy rate also showed a decline over the past decade for both men and women: from 43% in 2005 to 30% in 2011 and 28% in 2016; and from 66% in 2005 and 51% in 2011 to 48% in 2016 for men and women age 15-49 respectively (19) .

2.4 Women literacy and health

Health and education, particularly for women and children, have an effect on the health of a community(47).Evidence shows an association between women's education level and health care decisions(48).While general literacy is an important element of health literacy, it is not always a clear predictor of whether or not a person has health literacy(2).Study conducted among African American women with low and higher literacy showed that there were no substantial relationships between women with low and higher literacy skills in antenatal care utilization. Both groups had high rates of decreased use of antenatal care(49).

On the other hand, in a study in the Middle East and North Africa region, MENA shows a huge gender gap in education across the region's countries. The study also found that women with less education are more likely to marry at an early age and give birth shortly after marriage, and are less likely to obtain antenatal care or converse with their significant others about family planning issues.
(50).

The gender gap between men and women remains high in sub-Saharan Africa, despite efforts to increase educational opportunities for all children (51) . In a cross-country study of seven countries conducted by Save the Children on Literacy, Boost found that Ethiopia was the only country where the marks of girls were significantly lower than boys on half of the skills assessed, suggesting a key gender variance in the baseline literacy skills (52).

2.5 Health literacy

The principles and metrics of health literacy have evolved due to the rapid improvement of science and technology and will continue to evolve. Early descriptions of health literacy focused on the ability to apply simple reading and numeracy skills in a health care situation.(2) Recently health people 2030 updated the definition of 2 010 and 2010, and defined Personal health literacy as the degree to which individuals are able to access, process and appreciate basic health information and resources needed to make successful health choices. The degree to which organizations equitably encourage individuals to obtain, process and appreciate basic health information and tools required to make good health decisions is organizational health literacy.(53) .

Health literacy has be explained as a range with functional, interactive and critical health literacy (4).Health literacy is also considered an assessable outcome of intervention in health education (54). Improvements in health literacy can be measured by assessing improvements in knowledge and skills that enable health decisions to be informed and more autonomous (29). However high level of education or literacy does not necessarily ensure a high level of health literacy.(13)

A study on an adult population in the United States found that 50 percent of respondents had insufficient health literacy skills and showed that their ability to grasp the health information necessary to function within the health system was very low(55). Similarly, a community-based survey on Australian population classified the population as having suboptimal levels of health literacy by using various methods of health literacy assessment. The Test of Adult Functional Health Literacy identified 6.8 percent as having insufficient literacy, while 10.6 percent were identified by the Rapid Estimation of Adult Literacy in Medicine with reading levels below ninth grade Newest vital sign listed 26 percent of the sample population as having minimal health(56).

In The study done in Zambia High health literacy across the age groups ranged from 31.7 to 40.0 percent. Half of males 46.5 percent and just one-quarter 24.5 percent of females had high health literacy. Half 56.0 percent of urban respondents had high health literacy, while only 19.4% had high health literacy among respondents residing in rural areas (13).

2.6 Health literacy and health outcome

Health literacy is a very critical determinant of well-being in a community (1).health literacy is connected to health outcomes, For many medical conditions, limited health literacy has been related to worse health outcomes(57) . There have also been some adverse health effects related to low health literacy, such as increased hospitalizations and emergency room use, lower overall health status, and

higher mortality (22) . Low health literacy also impairs recognition and understanding of health conditions and communication within the healthcare system (23) .
Studies have also found that individuals with low levels of health literacy have less health consciousness, weak self-management of chronic conditions, less use of preventive services, and worse health outcomes(16) Limited health literacy can also raise the burden of illness on society, as measured by health care costs (13, 16).A study done Osborn notes that health literacy remained a significant, independent predictor of non-adherence (58) .

Another study from LaVonne shows that levels of health literacy vary based on age, education, residence, income, and the language spoken. This research also describes age and level of education as good measures of health literacy (59).In addition, the study by Michael demonstrates that decreased health literacy is more prevalent among women, those with lower levels of education, and particular racial and ethnic minorities.(57).

A research in Zambia shows the wealth index was positively associated with high HL and ranged from a low of 14.1% among the poorest to a high of 70.8% among the richest. Just six out of 10 respondents with some secondary education (58.4 percent) had high HL, and the rest of those who completed secondary education or had above secondary education had high HL (83.3 percent). Few respondents who had not completed primary education (11.4 percent) had high HL (13).

Studies have also found that low health literacy has a negative impact on the health knowledge of mothers' preventive actions, the ability to navigate the health care system, and the ability to care for their children (16) . A study done in Europe found that a large percentage of women who are found to smoke before pregnancy and still continue to do so in pregnancy, are women having high school or less as their highest education level. They are also those who have low health literacy(60) . Studies have also shown that women with adequate health literacy had significant differences in starting earlier and frequent antenatal care(20) .

2.7 Maternal health literacy and health outcome

Consultations dedicated to pregnancy planning, childbirth and parenting are very important as primary strategies in health education for maternal health. Antenatal care counseling will achieve maternal health literacy on topics of care during pregnancy, labour, and childbirth, child care, breastfeeding, and parenting abilities(61) .Maternal health literacy includes cognitive and social skills that determine women's motivation and ability to access, interpret and use knowledge in ways that support and sustain

their health and that of their children (4). Maternal health literacy is an important and efficient tool in ensuring proper antenatal care, healthy pregnancy and good pregnancy outcomes (36).
A cross-sectional study conducted in Chicago among pre-gestational diabetes pregnant women, found that women with low health literacy were substantially more likely to have unplanned pregnancy and were significantly less likely to talk about pregnancy beforehand with an endocrinologist or obstetrician. They were even more likely to have taken folic acid(62) .

Study done in Iran indicates important associations between maternal health literacy, antenatal treatment, healthy pregnancy, and pregnancy outcomes. The study shows that women with adequate health literacy have substantial differences in healthy pregnancy and pregnancy outcomes compare to women with in adequate health literacy. But there were no major differences in the APGAR, meconium plague, postpartum hemorrhage, PROM and neonatal death scores(20). A randomized controlled trial done in Singapore with found that women receiving antenatal education were more likely to breast feed exclusively up to six months after delivery. They indicated that postnatal support was marginally more effective than antenatal education (61).

A study conducted in Oyo State, Nigeria, also found that there were significant relationships between maternal health literacy and prenatal care and healthy pregnancy (36) . On the other hand, studies have found statistically significant associations between educational levels and the institutional delivery (63).

2.8 Factors associated with maternal health literacy

The number of antenatal care sessions offered by healthcare professionals, the expertise of healthcare personnel, the basic health services available, living standards, and community-based health education programs encourage health literacy for pregnant women (64) . In a systematic study the following factors affecting maternal health literacy were identified: the number of visits to antenatal care, maternal education, education for husbands, marital status, household income, employment for women, and media exposure, history of obstetric complications, women's age and religion(65) .
Maternal health literacy among pregnant women is correlated with associated socio-demographic and economic characteristics of pregnant women. Studies from various sub-Saharan and low-income countries have shown that maternal age, gestational age, gravity and level of maternal education, jobs, marital income are determinants of maternal health literacy (66, 67) .

2.9 Conceptual framework

The conceptual framework that will be used for this study is originally prepared for the purpose of explaining factors affecting Maternal Health Literacy in pregnant women.

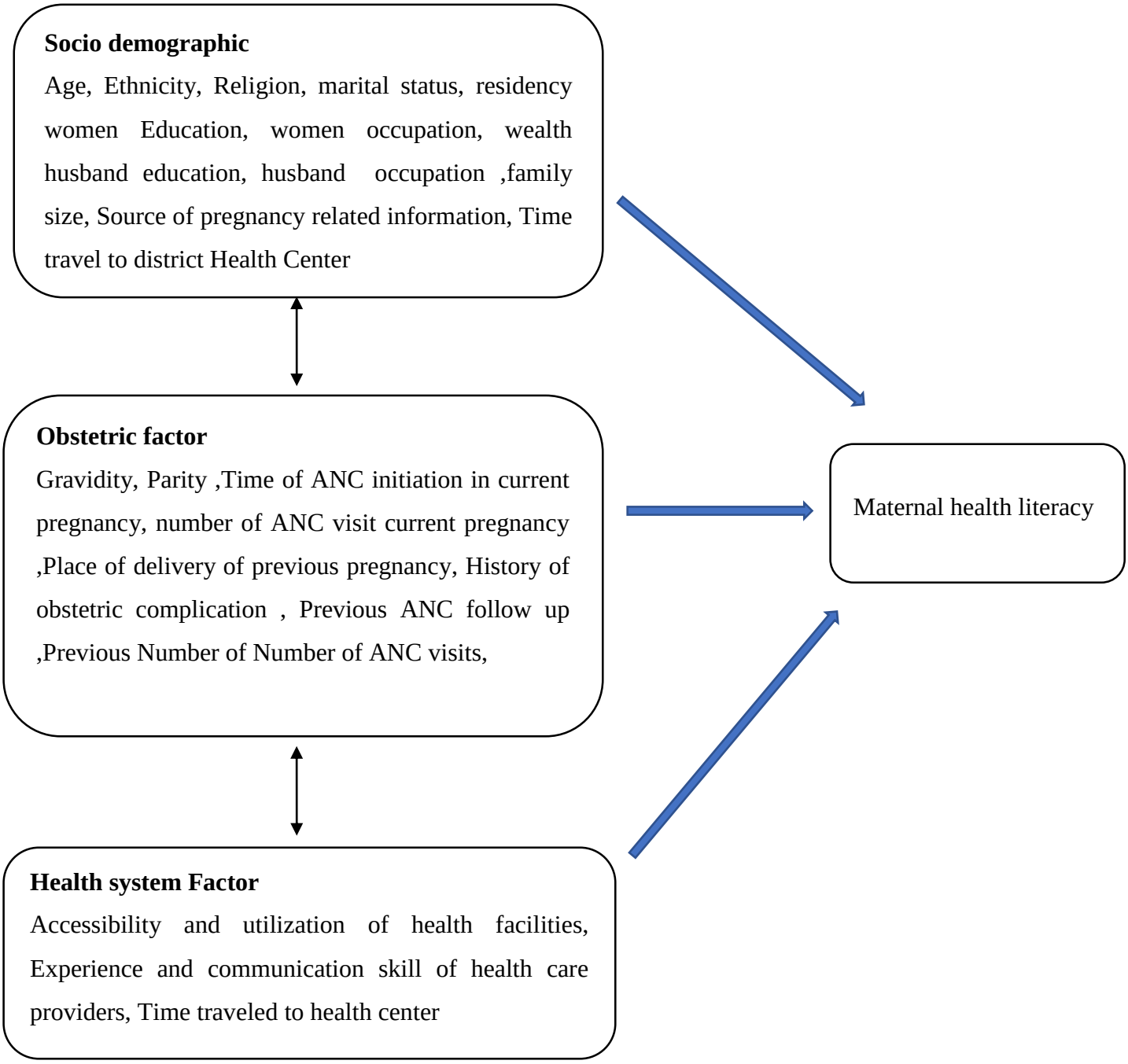

Figure 1: Conceptual framework on assessment of maternal health literacy and its determinants among pregnant women which is created from reviewing different literature

3. OBJECTIVES

3.1 General Objective

- To assess maternal health literacy and potential determinants of Maternal Health Literacy among pregnant women attending antenatal in Amhara region, Northern Ethiopia.

3.2 Specific objective

1. To assess maternal health literacy among pregnant women attending antenatal care.
2. To identify the potential determinants of maternal Health Literacy among pregnant women attending antenatal care.

4. METHODS AND MATERIALS

4.1 Study Area and study period

The study was carried out in the Antenatal Care Unit of selected health centers in West Gojam and South Gondar in one of the 177 districts of the Amhara region of Ethiopia. Amhara region reported a total population of 22,536999 in 2019.Bahirdar is the capital city of the Amhara Regional state and Amharic is a commonly spoken and official working language.

There are three administrative levels in the region and it consists of 15 zones, 183 Woreda and 3,973Kebels. Under its administration, there are 82 hospitals, 862 health centers and 3,561 health posts. According to the 2019 Amhara Health Bureau survey, the population is estimated at 226, 17465 for South Gondar and 275, 8806 for West Gojam, with projected pregnant women estimated at around 82,106 for South Gondar and 96, 8462 for West Gojam. There are 21 health centers in the West Gojam zone and 19 health centers in the South Gondar zone.

The study area is chosen by none governmental organization as intervention site for group antenatal care. Among the 40 heath centers in West Gojam zone and South Gondar, 12 heath centers has been selected based on availability of setup and number of expected ANC follow up flow. According to EDHS 2016, the number of pregnant women that received antenatal care from qualified providers in the region was 32.4 percent. Among them, 47.1% were informed of pregnancy dangerous signs of pregnancy, 65.8% were notified of a birth preparedness plan, and 53.4% took IFA supplements(19).

4.1.1 Study design and study period

A facility based cross sectional study design was employed among pregnant women who were attending antenatal care in Amhara region from February to March 2020.

4.2 Population

4.2.1 Target population

The target population was all pregnant women living in west Gojam and South Gondar Amhara region.

4.2.2 Source population

All Pregnant women who attended ANC in selected facilities in west Gojam and South Gondar

4.2.3 Study population

All pregnant women who attended ANC in the selected facilities in west Gojam and South Gondar at the time of the study period

4.2.4 Study unit

A single pregnant women who was attending ANC and available during data collection was selected based on inclusion criteria

4.3 Eligibility Criteria

4.3.1 Inclusion criteria

All pregnant women who were attending ANC at selected health centers were included.

4.3.2 Exclusion criteria

Pregnant women who had high-risk pregnancy, and term for labour (e.g. Bleeding, leaking, severe vomiting...) were excluded during the time of data collection were excluded

4.4 Sampling

4.5 Sample size determination

The sample size was calculated by using a single population proportion formula. By assuming p=expected proportion of population practicing BPCR = 16% from the study conducted in Robe Ethiopia. (40)

Zα\2=the critical value at 95% confidence level of certainty (1.96)

d=the margin of error between the sample and the population 5% error,

n= minimum requirement of sample size,

z= confidence interval (CI) =1.96=95%

p= the prevalence of birth preparedness and complication readiness P=16%

d =marginal error=5%=0.05

$$n = \frac{[(1.96)^2 * 0.16 * (1 - 0.16)]}{0.05^2} = 206$$

Non response rate of 10% and design effect of 1.5 is considered. Thus, the required sample size Calculated to be 330 women

4.5.1 Sampling Procedure

In order to obtain a representative sample, stratified random sampling has been used to select the source population. The top 18 health centers with higher monthly ANC case flow were identified and selected from the unpublished Amhara regional health office report. Then the gestational age of pregnant women was divided into three strata, the first trimester, second trimester and third trimester, and the participants in the study were then recruited from each stratum by asking them consecutively until the

required sample size was reached. Finally, the research covered those pregnant women full fill the inclusion criteria.

Table 1: Sampling procedure to assess the maternal health literacy in and its determinant among pregnant women attending antenatal care, Amhara region, Northern Ethiopia 2019/2020

Southern Gondar Zone Health Centers	Sampling Distribution	West Gojam Zone Health Centers	Sampling Distribution
Galadiyose	12	Korata	12
Ambo Meda	12	Wanzaye	12
Lalibela	12	Kunizila	12
Areb Gebya	12	Fore Sankira	12
Legidiya	30	Merawi	30
Anbessame	12	Wetet Abaye	12
Yisimala	32	Ambo Mesk	12
Durbete	12		
Addis Zemen	32		
Hamusit	30		
Yifag	32		

4.6 Study Variables

4.6.1 Dependent variables

- Maternal Health Literacy(self-care, problems in pregnancy, birth preparedness and complication readiness, breast feeding and family planning)

4.6.2 Independent variable

- Socio demographic characteristics:
  - Age (in completed years)
  - Marital status (married, single, divorced, widow)
  - Educational status of pregnant women (Illiterate, Read and write, Primary Education, Secondary Education, Collage and above)
  - Religion (Muslim, Orthodox, Protestant, Other)
  - Family size

- Residency(urban, Rural)
- Occupational status of pregnant women (employed, not employed)
- Husband's occupational status (employed, not employed)
- Husband's educational status (can't read and write, Read and write, Primary Education, Secondary Education, Collage and above)
- wealth index(wealth index was computed for questions which is related with housing conditions & house hold characteristics, principal component analysis(PCA) was used to reduce the number of variables measuring wealth, finally PCA had divided it equally it to five quintiles .

➢ Reproductive characteristics:

- Gravidity (Prim gravida, Multi-gravida)
- Parity (Nulliparous, Prim Para, Multi-Para, Grand Multi-Para)
- Number of ANC visits (1 visit, 2 visits, 3 visits, 4 and more visits)
- Gestational age
- Previous obstetric complication (bleeding, prolonged labor,)
- Place of delivery of previous pregnancy (home health facilities)
- Previous ANC follow up
- Previous Number of ANC follow up
- Gestational age at first visit first ANC follow up
- Source of pregnancy related Information (HEW,HDA, health care provider, Other pregnant women, family, friends, media, books, did not receive any information
- Time travel to district Health Center in minute

4.7 Data collection technique and instruments

Data was gathered via an interviewer-administered questionnaire. The tools that are utilized in this study are standard tools that are already validated for sub Saharan countries. The English version of maternal health literacy assessment tool is adopted from Home Based Life Saving Skills evaluation tool that is found to be reliable and had an acceptable validity in sub Saharan countries to assess maternal health literacy among pregnant women. The demographic data questionnaire and was adapted From EDHS and socioeconomic status was assessed using household fixed asset and housing condition questions. The questionnaire was first prepared in English and translated into Amharic, as the study participants were Amharic speakers, and then translated back into English by different translator to ensure the quality of the translation and to keep the consistency. Prior to data collection face validity was conducted on pregnant women in health center which was not included in the study.

The data collection lasted for a total of two months, between February and March 2020. Thirty two data collectors participated in the data collection process. The data collectors were BSc and clinical nurses who did not work in the antenatal care unit. A two day training course was also given for the data collector.

4.8 Data quality control technique

Data quality assurance was done before, during and after data collection .Principal investigator gave two day training for the data collectors and supervisor about the purpose of the study, data collection procedure and ethical concerns. After data was collected the immediate supervisor in the field and the principal investigator reviewed all the collected data for completeness and consistency. Then before analysis missing values and outliers was checked by the principal investigator. Completeness, consistency & coding of the data were checked by the supervisor and principal investigator throughout the data collection process to assure the quality of the data.

Face validity was conducted for all the items of MHL questionnaire. Focus group a discussion with 8 pregnant women was conducted with the aim of clarifying the language used so that the source population is be able to answer the intended questions. Based on the feedback unclear and redundant questions were corrected modified and rephrase. To keep accuracy of data, data entry was done by the principal investigator. Non overlapping numerical code was assigned for each question and the coded data was entered using Epic data version 4.4.2.1 and was cleaned by STATA 15 after data collection of data, data entry was done by the principal investigator. Non overlapping numerical code was assigned for each question and the coded data was entered using Epic data version 4.4.2.1 and they was cleaned by STATA 15 after data collection.

4.9 Operational definition

Maternal health literacy: - was scored by its four component using (self-care to preventing problems, danger sign during pregnancy, Birth Preparedness and Complication Readiness and Breast feeding and family planning) below <25 was considered to have inadequate MHL and above 25 was considered to have adequate MHL. Cut off points were created by calculating the mean of all items.

Self-care to preventing problems was assessed by:- Receive iron/folic acid during your pregnancy, know how to take iron folic acid supplement pills ,Use of iron folic acid supplement, how many days should iron folic acid supplement pills be taken during the whole pregnancy, Know the side effects of iron/folic acid pills, sleep under a mosquito net, how to prevent problems during your pregnancy:- Rest often, Sleep under a mosquito net ,Eat an extra meal every day ,Drink plenty of fluids ,Take iron and folic acid tablets, going to ANC follow-up, Watch for problems and go to health facility.

A danger sign component was assessed by: - do you know any warning problems or complications during pregnancy can you mentioned the danger sign (9), what do you do if you experienced any of the signs of complications?

Birth Preparedness and Complication Readiness component during pregnancy : -was assessed by birth preparedness plan, things prepared for birth, talk to with health care provider about planned delivery place, problems or complications during birth.

Breast feeding and family planning component: - was assessed by how long after birth to start breast feeding, give the first yellowish milk to the baby, How often to breast feed ,How long to EBF, talk with HCP about using family planning ,plan to use family planning.

4.10 Data management and analysis

Data was checked for completeness, consistencies and outliers by the principal investigator then after cleaned, and entered into Epi Data version 4.4.2.1 software package. Then data was exported to Statistical Packages for Social Sciences **(**SPSS) version 20 for analysis. The analysis ranged from simple descriptive statistics to multivariable logistic regression. Summary statistics, such as frequency and percentage, were computed to get descriptive statistics of the data after checking for data reliability. Maternal health literacy was seen for association with their respective independent variables with bivariate logistic regression.

Bivariate analysis was also used to test the association between independent variables and pregnant women's Maternal health literacy. Variables which were found to be significantly associated with overall Maternal health literacy were retained for subsequent multivariate analysis.

Maternal health literacy questions on the dataset were all dichotomized to 1 and 0 (1 is having Maternal health literacy and 0 is Maternal health literacy) to provide an overall score out of maximum score of 51. Having or not Maternal health literacy was declares by using a score of 25.9 as cut point. All of the 4 components in the Maternal health literacy were given a score 0 for no correct answers, 1 for incorrect answers.

At the Data set of pregnant women the categorical data from the self-care domain part was recorded to dichotomous data of 1 and 0, where 1 is having Knowledge and 0 is having no knowledge. With this self-care components of the tool were entered to compute an overall score of knowledge from 15. Knowledge was then declared as knowledgeable (score 8.7 and above from 15) and not knowledgeable (score <8.7 from 15).

Danger sign, components of the questionnaire of pregnant women were dichotomized to 1 and 0, where 1 is having knowledge and 0 is having no knowledge on specific danger signs during pregnancy. Each component was given a score of 1 for having knowledge to provide a sum for

overall knowledge out of 11.overall the having knowledge was declared for score of above 3.8 while not having knowledge for score under 3.8.

Birth preparedness and complication readiness components of the questionnaire of pregnant women were dichotomized to 1 and 0, where 1 is having knowledge and 0 is having no knowledge on specific danger signs during pregnancy. Each component was given a score of 1 for having knowledge to provide a sum for overall knowledge out of 16.overall the having knowledge was declared for score of above 6.5 while not having knowledge for score under 6.5.

Breast feeding and family planning components of the questionnaire of pregnant women were dichotomized to 1 and 0, where 1 is having knowledge and 0 is having no knowledge on specific danger signs during pregnancy. Each component was given a score of 1 for having knowledge to provide a sum for overall knowledge out of 16.overall the having knowledge was declared for score of above 6.8 while not having knowledge for score under 6.8.

Wealth index- household fixed asset and housing condition questions the questionnaire were dichotomized a score "1" given to those who own/have and score of "0" given to those who did not. Principal component analysis (PCA) was done. Wealth index was by rank ordered into quintiles to give poorest, poor, medium, wealthy and wealthiest status.

Finally, Variables with **p-value <0.05** in the bivariate analyses were included in the multiple logistic regression models. A number of separate multiple logistic regressions were run for MHL and the differences between variables were explored, variables which are statistically significant were considered as determinant factors. In all cases, Statistical significance for the multiple logistic regression analysis was set at $p \leq 0.05$. The Hosmer-Lemeshow goodness of fit test was used to check whether the model adequately fits the data in this study. The results will be presented in tables, words and figures.

Table 2: Domains of maternal health literacy with their maximum score points

Outcomes	Components	Score points*
Self-care to prevent problems	Receive iron/folic acid during your pregnancy +Know how to take iron folic acid supplement pills+ Use of iron folic acid supplement + days did you take t iron folic acid supplement pills During the whole pregnancy +Know the side effects of iron/folic acid pills + thing done to prevent problems during your pregnancy (8) Facility.	15
Common problems and complication during pregnancy	Warning problems during pregnancy + What to do when they perceive unusual signs or dangers. (10)	11
Birth Preparedness and Complication Readiness during pregnancy	Birth preparedness plan talk with health care provider about planned delivery(3) + things you did to prepare for the delivery(9) place problems or complications during birth(4) +	16
Breast feeding and family planning	Duration after birth to start breast feeding + give the first yellowish milk to the baby+ How often to breast feed +How long to EBF +talk with HCP about using family planning+ plan to use family planning.	9

4.11 Ethical considerations

Ethical approval was obtained from Research Ethics Committee (REC) of School of Public Health, College of Health Sciences of Addis Ababa University. Letter of support was obtained from Addis Ababa University School of public health to Amhara health bureau to inform them about the study. Permission letter from Amhara health bureau was requested to undertake the study in health facilities which the study is conducted.

The trained data collectors from the health centers explained the objective of the study and all the necessary information to the study participants. The participants were informed that the information will be accessed by the principal investigator. Written informed consent was obtained from the study participants. Data was kept confidential and anonymous and it was used only for this research purpose.

The study participants was informed there was no incentives (no direct benefit) given to respondents but the result of the study will be disseminated to concerned bodies working on maternal health and health education. They were also informed that, there is no harm due to participating in the study except consuming study participant's valuable time; average of 50 minutes were consumed to answer the questions.. Respondents were not forced to answer questions and could withdraw at any time if they did not want to participate anymore. Subjects who are not willing to participate in the study were informed that they will not face any harm due to none participation.

4.12 Dissemination of results

The final report of this study will be submitted to Addis Ababa University, College of Health Sciences School of Public Health, Amhara Health Bureau and Jhpiego. It will also be disseminated to governmental and nongovernmental organization, institutions and individuals and policy makers and for individuals who directly or indirectly works on maternal health and health promotion. In addition, effort will be made to disseminate the results on different professional conferences and publish on local/international journals.

5. RESULT

5.1 Socio-demographic characteristics of respondents

The sample included a total of three hundred thirty pregnant women, among those 327 of them were included in the study resulting a response rate of 99.09 %. Three of the participants were excluded from the study because they didn't have adequate time to complete the interview. Majority 264 (79.2%) of them were between the age 20 and 34. The mean age of pregnant women was 27.01 (SD +5.7 years). A higher proportion 223(68.1%) of the women were rural residents .majority them 309 (96.9%) were Orthodox religion followers while others were Muslim, and Protestants. About two-third 213 (65.1%) of pregnant women had no formal education and less than a quarter 76 (23.2%) had primary level education. The study participants had an average of 4.33(SD +2.087) family size in their households. Most of the women were from the Poor households (38.5%).

Table 1 Socio-demographic characteristics of pregnant women attending antenatal care, Amhara region, Northern Ethiopia 2019/2020

Variables	N=(327)	Percent %
Age (in year)		
<20	28	8.56
20-34	259	79.2
>35	40	12.2
Residence		
Urban	104	31.8
Rural	223	68.1
Women Educational status		
No formal education	213	65.1
Primary education	76	23.2
Secondary education	20	6.11
College graduate or above	18	5.50
Women occupation		
Farmer	185	56.5
Housewife	72	22.0
Merchant	38	11.6
Civil servant	17	5.19
Other[a]	15	4.58
Marital status		
Never married	22	6.72
Married/ Living together	304	92.9
Widowed	1	0.30
Spouse educational status		
No formal education	136	41.5
Primary education	150	45.8

Secondary education	19	5.81
College and above	22	6.72
Spouse occupation		
Farmer	227	69.4
Merchant	48	14.6
civil servant	24	7.33
NGO/ Private	19	5.81
Others[b]	9	2.75
Family size		
<=5	235	71.8
>=5	92	28.1
Wealth index		
Poorest	68	20.7
Poor	126	38.5
Medium	45	13.7
Wealthy	55	16.8
Wealthiest	33	10.0

[a] Daily laborer/ Unemployed /house maid [b] daily laborer/ Unemployed

5.2 Last Pregnancy ANC follow-up History and Obstetric Characteristics

The obstetric history of the women indicates that about a quarter 94 (28.7%) of them were Primi-para and about half of them were 110 (46.6%) Multi-para were as 184 (35.5%) were grad-para. The great majority of the women 192 (81.3%) had ANC follow up in their past pregnancy among them a quarter of them had four or more ANC.A higher proportion of the pregnant women 158 (66.9%) delivered in health facility and 183 (77.4 %) used SBAs in their last pregnancy.

Table 2: Last Pregnancy ANC follow-up History and Obstetric Characteristics of pregnant women attending antenatal care in Amhara region, Northern Ethiopia 2019/2020

Variables	**N=(236)**	**Percent %**
Total Number of pregnancies		
1	42	17.7
2 to 4	110	46.6
5 and above	84	35.5
Total number of live birth		
0	9	3.81
1	35	14.8
2 to 4	150	63.5
5 and above	42	17.8
ANC follow up		
Yes	192	81.3

No	44	18.6
First ANC visit in month		
1-3 month	61	31.7
4-5 month	54	28.1
6-7 month	54	28.1
>=8 month	23	11.9
Number ANC visit		
One-two times	92	47.9
Three times	52	27.0
Four and more	48	25.0
Pregnancy complication		
Yes	42	17.8
No	194	82.2
Complication experienced		
Vaginal bleeding	20	47.6
Swelling of hand and face	5	11.9
Blurring of vision and headache	9	21.4
Prolonged labor	4	9.52
Retained placenta	4	9.52
Delivery place		
Health facility	158	66.9
Home	77	32.6
Elsewhere	1	0.42
Delivery by SBAs		
HCP	158	66.9
HEW	5	2.11
TBA	20	8.47
UBA	53	22.4
Time to nearest health facility		
< 15min	56	17.1
15-30min	75	22.9
>30min	196	60.0

5.3 Obstetric characteristics of current pregnancy

Among the total study participants, 214 (65.4%) of them came to ANC visit within four month of their pregnancy Whereas 98 (29.9 %) of the pregnant women were on their first trimester in their pregnancy at the time.150 (45.8 %) had at least one history of antenatal care. The majority of the respondents' 274 (83.7%) of them stated that their current pregnancy is planned.

Table 3: obstetric characteristics of current pregnancy of pregnant women attending antenatal care, Amhara region, Northern Ethiopia 2019/2020

Variables	**N=(327)**	**%**
Gestational age in(month)		
1-4	98	29.9
5-7	175	53.5
>7	54	16.5
Gestational age at first visit		
1-4 month	214	65.4
5-7 month	93	28.4
>7 month	20	6.11
Number ANC visit		
Once	150	45.8
Two- three times	134	40.9
Four and more	43	13.1
Pregnancy Related Problem		
Yes	65	19.8
No	262	80.1
Experienced pregnancy complication (n= 65)		
Vaginal bleeding	18	27.6
Swelling of hand and face	20	30.7
Blurring of vision and headache	6	9.23
High Fever	21	32.3
Planned Pregnancy		
Yes	274	83.7
No	53	16.2

Domains of maternal health literacy

The results of this study show that half 54.1% of those interviewed had maternal literacy above the mean score. Half (54.1%) of the pregnant women had Self-care knowledge, more than half (61.8 %) had knowledge on danger sign and birth preparedness and 64.2% knowledge on breast feeding and family planning However, overall 54.1% had adequate maternal literacy.

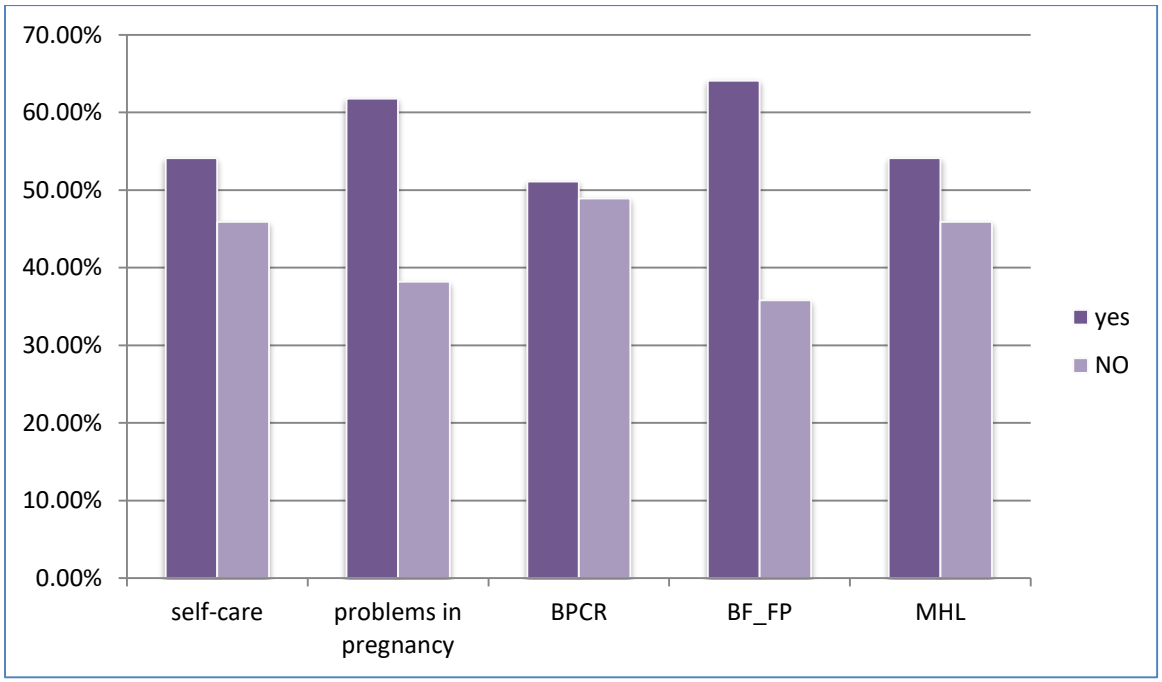

Figure 2: Domains of Maternal health Literacy

Source of Health Related Information during Pregnancy

In this study health professionals were a common source for pregnancy related information accounting 52.4% pregnant women. Radio 0.91 % and Television 0.61 % were two of the least mentioned source for pregnancy related information. (3.94 %) pregnant women did not receive any information on pregnancy related issue.

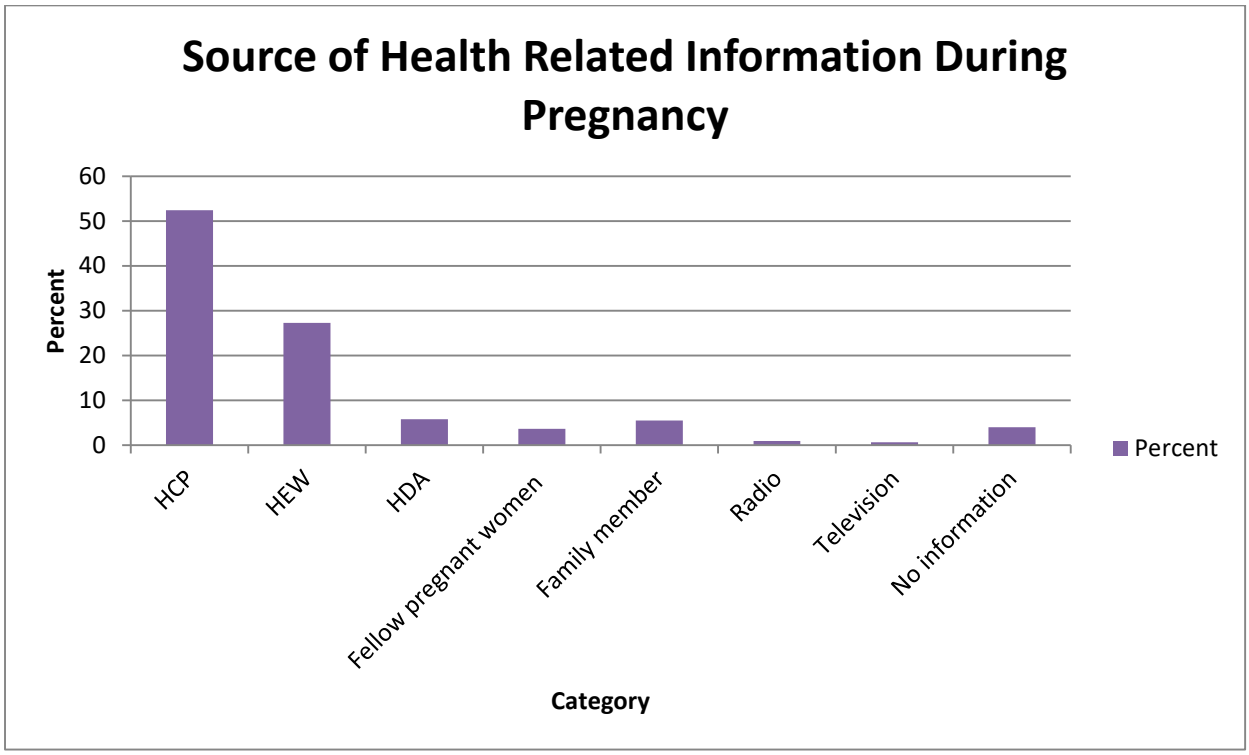

Figure 3: Source of Health Related Information during Pregnancy of pregnant women attending antenatal care, Amhara region, Northern Ethiopia 2019/2020

Logistic regression Analysis

After checking the assumptions of logistic regression analysis, both Bi-variate logistic regression and multivariable logistic regression was done to show the significance of each independent variable with MHL.

5.4 Bi-variate associations between MHL and independent variables

From socio-demographic characteristics age, place of residence, husband Occupation, Wealth, Family size, Formal school Attendance of the participant and Source of Health related Information had a p value< 0.05 on the bi-variable logistic regression with maternal health literacy, so they were retained to the final model. Gestational age, Previous Health facility delivery and Last pregnancy ANC attendance were the variable that were candidates from the Obstetric and past ANC history to bi-variable logistic regression, they were included in the multi variable logistic regression with p value < 0.05 whereas number of ANC visit, number of pregnancies, complication during pregnancy, ANC attendance of past pregnancy , number of antenatal care in current pregnancy were not significantly associated with MHL in bivariate analysis (p>0.05).

Table 4:- Determinants of maternal health Literacy among pregnant women attending Antenatal care, Amhara region, Ethiopia, 2019/2020.

Eligible for multivariable analysis at p<0.05 **COR: crude odds ratio CI: confidence interval**

5.5 Multivariable logistic regression

Maternal health literacy score of pregnant women was found to have significant association with number of pregnancies, gestational age, Formal school Attendance, Permanent residence and source of health information. The odds of having maternal health literacy among multigravidas were 2.66 times than Primi-gravida (AOR=2.66, 95%CI: 1.03, 6.86)

The odds of having maternal health literacy among pregnant women who were urban residence was 2.66 times than those who were rural residence (AOR=2.66, 95%CI: **(1.05**, **6.71**).The odds of having maternal health literacy during pregnancy among pregnant women who were on their third trimester of pregnancy was **3.44** times than those on their first trimester (AOR=3.44, 95%CI: 1.04, 11.4).

.The odds of having maternal health literacy during pregnancy among women who attended formal education was 2.45 times than those who did not attend formal education (AOR=**2.45**, 95%CI: 1.04,

Variable	Categories	Maternal health Literacy		Total No	COR(95%CI)	P Value
		No	Yes			
Residence	urban	11.3	220.1%	103	1	
	Rural	34.5	33.9	224	**0.551(0.34, 0.89)**	**0.015***
Age	<30	38.8	39.1	255	**1**	
	>30	7.03	14.9	72	**2.11(1.22,3.67)**	**0.008***
Formal school Attendance	No	34.3	29.9	210	1	
	Yes	11.6	24.1	117	**2.38(1.48,3.81,)**	**0.000***
Husband Occupation	Farmer	33.9	34.3	223	1	
	Merchant	8.25	10.7	62	1.29(0.729,2.26)	0.386
	Civil servant	3.66	9.17	42	**2.48(1.21,5.09)**	**0.013***
Family size	>5	37.0	34.9	235	1	
	<5	8.86	19.2	92	**2.31(1.39,3.83)**	**0.001***
HH wealth Index	Poorest	11.0	6.72	58	1	
	Poor	9.48	10.3	65	0.71(0.30,1.67)	0.436
	Middle	16.8	21.7	126	0.84(.038,1.83)	0.839
	Rich	3.97	6.11	33	1.26(.049,3.200	0.632
	richest	4.58	8.86	44	**0.39(0.16,0.95)**	**0.039***
Source of Health related Information	HCP	13.1	8.2	67	1	
	Non HCP	32..7	46.7	260	**2.56(1.46, 4.47)**	**0.001***
Parity	Primi-para	8..2	5.1	44	1	
	Multi-para	24.5	27.5	170	**2.59(1.26,5.29**	**0.009***
	Grand multi-para	13.4	21.4	113	1.79(0.91, 3.52)	0.093
Last pregnancy ANC attendance	No	10.5	7.62	43	1	
	Yes	31.7	42.3	190	**0.47(0.24,0.92)**	**0.027***
Previous HF delivery	No	22.0	19.4	98	1	
	Yes	20.3	36.8	135	**0.49(0.29,0.83)**	**0.008***
First ANC(in month)	<3 month	19.9	17.1	121	1	
	>=4 month	25.9	37.0	206	**1.65(1.05,2.59)**	**.0.030***
Gestational Age	First TMP	15.3	14.4	97	**1**	
	Second TMP	26.6	27.5	177	1.101(0.67,1.82)	0.705
	Third TMP	3.10	12.2	53	**3.273(1.56,6.87**)	**0.002***

5.61), while women who got heath related information from health care providers were found to have higher odds of having maternal health literacy during pregnancy than those who did not have heath related from information from health care providers (AOR= 19.1, 95%CI: 1.33, 7.42).

Table 5 :-Factors associated with maternal health Literacy among pregnant women attending Antenatal care, Amhara region, Ethiopia, 2020

Characteristic		MHL		Total No	COR (95%CI)	AOR (95%CI)	P-value For AOR
		NO (%)	Yes (%)				
Permanent residence	Urban	37 (11.3)	66(20.1)	103	1	1	
	Rural	113 (34.5)	111(33.9)	224	0.551(0.34, 0.89)	**2.66(1.05,6.71)**	**0. 039 ****
Formal school attendance	No	112(34.3)	98 (29.9)	210	1	1	
	Yes	38(11.6)	79 (24.1)	117	2.38(1.48, 3.81)	**2.45(1.04,5.61)**	**0.040****
Source of health information	Non HCP	43(13.1)	24(8.2)	67	1	1	
	HCP	107(32.7)	153(46.7)	260	2.56(1.46, 4.47)	**3.14 (1.33, 7.42)**	**0.009****
Parity	Primi-para	27(8.2)	17(5.1)	44	1	1	
	multipara	80(24.5)	90(27.5)	170	2.59(1.26,5.29)	**2.66(1.03,6.86)**	**0.043****
	Grand multi-para	43(13.4)	70(21.4)	113	1.79(0.91, 3.52)	2.26**(**0.67**,**7.58**)**	0.187
Gestational age	First TMP	50(15.3)	47(14.4)	97	**1**	1	
	Second TMP	87(26.6)	90 (27.5)	177	1.101(.67,1.82)	0.76(0.35,1.64)	0. 48
	Third TMP	13(3.10)	40(12.2)	53	3.273(1.56,6.87)	**3.44(1.04,11.4)**	**0.043****
Number of visit in current pregnancy	once	76(23.24)	74(22.62)		**1**	1	
	Twice	51(15.59)	55(16.81)		0.33(0.15,0.71)	0.08(0.19,3.36)	
	Three times	12(3.66)	18(5.50)		0.35(0.16,0.78)	0.39(0.09,1.58)	
	More than four	11(3.36)	32(9.78)		0.51(0.18,1.40)	0.65(0.14,2.99)	

*significant at P<0.05 AOR: Adjusted odds ratio CI: confidence interval

6. DISCUSSION

The main aim of this study was to assess maternal health literacy of pregnant women and its determinants particularly in pregnant women attending antenatal care in Amhara region. This study revealed that Place of residence, source of health information, attending formal school; gestational age and parity had a positive association with maternal health literacy. Meanwhile, number antenatal care has no association with having maternal health literacy.

In our study 54.1% of the pregnant women had adequate maternal Health literacy score during their pregnancy where as in a study done in Iran 66% were classified as having moderate to good maternal health literacy. This difference might be due using difference in assessment tool for maternal health literacy or it could be because 65.13 % of our participants had no formal education whereas 61 % of the study participant graduated at the level of high school and more in the study of Iran. Even if general literacy cannot directly determine the level of health literacy it is one a the predictors for maternal health literacy.(20) and our study was similar with the study done in the South of Iran where the findings revealed that more than half of the subjects had an inadequate and border-line health literacy.(68)

The mean score of maternal health literacy in our study was 26.This result was lower than a study in Iran where the mean score of maternal health literacy was 42.4±7.5.this difference could because one of the inclusion criteria in the study was being literate (69) .but it was higher than a study done in Paraguay, where the mean and standard deviation of the maternal health knowledge score at the first, second, and third interviews were 12.6 ± 8.0, 16.2 ± 6.6, and 19.4 ± 6.8.(64) The variation could be due to the study in Paraguay was done among pregnant women who did not complete compulsory education or it could be due to the difference in sets of questions used to assess maternal health literacy.

In current study inadequate health literacy was observed with pregnant women who did not attend formal education. Other studies have achieved similar results were the level of maternal health literacy increased along with the educational level.(29, 70) This notion that the average level of health literacy is higher in people with higher education compared to other less educated groups is also is supported by study done Iran(68, 69) This may be strengthens the premise that years of schooling might be associated with higher level of maternal health literacy.

In contrast to this, study in Paraguay found no association between educational states and maternal health literacy.(64) This variation could be because the study participant of the study has a similar educational status where they did not have higher education or it could be because of difference in study period.

In this study pregnant women who live in urban area had adequate maternal health literacy than those who lives in rural areas this result was in line with study in Iran, where significant relationships were identified between maternal health literacy and place of residence. (69) This may suggest that women who live in urban areas has better access to health care service and reproductive health information that may contribute to having maternal health literacy.

We have also found that the number of times that a woman has been pregnant, to be positively associated with having adequate maternal health literacy, this finding is consistent with results from study done in Uganda which indicated that women who had been pregnant more had a better maternal health literacy in comparison to women who is having her first pregnancy (71) This may due to a women who has been pregnant before may have antenatal care in last pregnancy or she may retain information from her own previous pregnancy experience.

In this study, there was a significant mean difference in the total score on those who received health information from health professionals and between those who had source of health information other than health professionals a study done in Paraguay also supports this findings which shows associations between maternal health literacy score with healthcare personnel capabilities, available health facility equipment's and the community's social network (64)

In our study women in their third trimester were more likely to have maternal health literacy compared to those in their first trimester, there is for this might be because as the gestational age increase women tend to share their pregnancy with other women's and discus their experience ask for advice. In the present study no significant relationship was observed between the maternal health literacy and age, which was consistent with the studies done in Iran. (70) However, this result was inconsistent with the results found by Iran and Uganda (29) this inconsistency might be due to difference in study population with difference in the age range. In our study the median age was 27 whereas in Uganda study the study was among adolescents aged 15–19 years attending antenatal care or the difference could be because of difference study area.

The results of this study showed that there was no statistically significant difference in those women who received care only once, twice, three times or on those who received more than four antenatal cares during their pregnancy. This finding is in line with a study done in Iran that showed that there was no association with the number of Antenatal care and maternal health literacy, which is similar to our finding. **(20)** However, this finding is inconsistent with studies done in Iran, Paraguay and

Nigeria which have shown statistically significant association between antenatal cares with maternal health literacy **(29)** . The variation between our study and the study in Iran could be due to the difference in number of antenatal care the study participant had. Which in the Iran study the mean antenatal cares visit is in women was 11±1.1 times and whereas in our study only 13.03 % of participants received four and more antenatal cares. Or the variation between the studies might probably be because of differences between quality of healthcare services, and length of contact time with health care proved during antenatal visit. During the data collection we have observed that pregnant women spend few minutes with their provider when they come for antenatal visits.

Another unanticipated finding was that socio economic status was not associated with maternal health literacy which was inconsistent with a study done in Iran (69) Perhaps the reasons for the lack of inconsistency of the outcome of this studies with other similar studies might be due to differing measurement tools, the studies used Family monthly income to determine economic level of the pregnant women whereas we used the HHS tool to assess their wealth, or it could be because of Social/cultural characteristics and the place of the study. In the present study the majority of the participants in this study were living in rural areas.

6.1 Limitation and strength of the study

Limitation

The study has questions about past pregnancy which may introduce recall bias. Since the data collectors were health practitioners, the respondents might also have answers that are affected by social desirability. Another limitation to our study was Bing a facility based cross sectional which may indicate study some level of health literacy among pregnant women since they already came to the health centers. The Lack of similar studies in developing countries and in our country makes it hard to do a comparative discussion.Maternal health literacy tool is not validated for Ethiopian context which is the weekness of the study.

6.2 Strength

As a main strength, this research study tried to address the overlooked public health issue of health literacy particularly maternal health literacy so this study can serve as a baseline data, for researchers and other interested stakeholders to conduct further assessment.

7. CONCLUSION AND RECOMMENDATION

7.1 Conclusion

Our findings suggest in order for pregnant women to have maternal health literacy antenna care should be utilize properly. Health care providers should be aware of the maternal health literacy level of pregnant women during consultation and give health education at different levels matched with clients differing levels of maternal health literacy. When approaching women without formal education, living in rural areas, with poor economies, health care providers should use appropriate method that can be understandable for the target audience.

7.2 Recommendation

For health services

- As health care providers is the main source of health information for this community. They need to have an understanding on the concept of health literacy. It is also better if they assess maternal health literacy of pregnant women to provide quality antenatal cares so that they can deliver health education programs according their client's maternal health literacy level.

Policy makers

- It will be good that if target-specific health education messages that promote health literacy is designed for pregnant women according to maternal health literacy.

- **Future studies**
- To further our understanding on maternal health literacy future Community-based studies should be done.

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ANNEX

Annex: 1

Study Information sheet 1

Greetings! My name is.....I am here on behalf Finina Abebe student of public health at Addis Ababa University. She is conducting a research on Assessment of maternal health Literacy and its determinants among pregnant women attending antenatal care in Amhara region for the partial fulfillment of second degree, because it is essential to identify what are the level and determinants of maternal health literacy for implementing possible health education intervention to overcome the problem. You are selected to participate in this study because you are currently attending in one of the selected health centers for the study purpose .you are chosen to participate in this study. Before you decide whether to participate or not in this study, I would like to explain to you the objective of the study, any risks, benefits, procedure and what is expected from you.

Objective of the study: the study will assess maternal health literacy and determinants of maternal health literacy among pregnant women attending antenatal care.

Procedure: The study involves a face-to-face interview with the data collector that will ask you a set of questions using a structured questionnaire. After signing the consent form, the Data collector will then ask you the relevant questions and your responses will be written on the questionnaire. The interview will take about 50 minutes.

Risk and benefits

There is no direct benefit to study participants but the result of the study will be disseminated to concerned bodies including Amhara health bureau, Addis Ababa University and also Ministry of health and different non- governmental organization working on maternal health in order to take action on the gap with maternal health literacy. The study could provide evidence on the effectiveness of group antenatal care in improving the maternal health literacy of the beneficiaries. It could also enable the government and health organizations to design appropriate intervention strategies to improve maternal health literacy.

Risk (harm) of the study: There is no harm in participating in this study but Part of your time (Average of 40 minutes) will be consumed to answer the questions.

Rights of participants: completely free to take part or not in this study. If you decide that you do not want to be part of the study, this will not be held against you and you will not be disadvantaged in any way. You are also free to withdraw from the study at any time if you feel that you cannot proceed. You can ask any question which is not clear for you.

Confidentiality& privacy

Interviewing will take place in a private. We would like to assure you that this privacy will strictly be maintained throughout the collection, analysis, and reporting of the data. A code will be used to identify your participation and no name will be used for your responses to any of the questions that will not be given to anyone else. No reports of the study will ever identify you, only information about the total group will appear on report of results. Primary data will be handled only by the researchers, and will be stored through a password protected system. Data will be analyzed using codes, without personal identifiers. . Only the principal investigator will know the details and will discard it after completing analysis. Would you want to take part in the study?

1- No (say thank you) 2- Yes (take informed consent)

Annex 2:

Information sheet for health care providers

Good day to you Sir/Madam, my name is……. and I am working on a cross sectional study in collaboration with Addis Ababa University (AAU). The main goal of the study is to assess the maternal health literacy and its determinant on pregnant women attending antenatal care. This knowledge will help us in providing proper counseling for pregnant women in the future and will help to improve maternal health literacy by antenatal counseling. We would very much appreciate your participation in this survey. If you agree to participate, I will give you a self-administered questionnaire which asks about your professional background .Whatever information you provide will be kept strictly confidential by using codes and will not be shown to other individuals not included in this study. You can choose not to participate now or at any time during our interview. However, we hope that you will actively participate in this study since the insights and data we get from you are very important. The questionnaire will only take about 10 minutes of your time. You will not have any direct incentives by participating in the interview.

At this time, do you want to ask me anything about the survey? (If yes answer his/her questions politely)

May I give you the questionnaire now? (Circle)

1 = Yes 2 = No (Thank him/her for his/her time and end the interview)

Signature of participant: _____Date: _____

Name &Signature of interviewer: _____Date: _____

Name & Signature of Supervisor: _____Date: _____

Annex 3:

Informed consent

The objective, benefits, harms, procedures and confidentially of the study has been read and explained to me in the language I comprehend. I further understand that, taking part in this study and withdraw from participating in any time without having reason is purely voluntary.
I agree to participate in this study.

Participant: Sign (signature or thumb print).....Date…….

For further explanation use the Principal Investigator's Address;

Name: Finina Abebe

Email: finnaabebe1@gmail.com

Cell phone: +251 983360681

No.	Questions	Answers and Coding	Skip
	Date of data collection		
	Code of data collector		
	Code of health center		
Section 1: Socio demographic characteristics			
101	Woreda		
102	Kebele		
103	Health center		
104	Card No.		
105	Phone number	Mobile: Husband / home Friend / neighbor	
106	Age (in completed years)		
107	Permanent residence	1. Urban 2. Rural 3. Outside of Amhara	
108	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Others (please specify)_____	
109	Ethnicity	1. Amhara 2. Gurage 3. Tigre 4. Oromo 5. Other (please specify) _____	
110	Have you ever attended school	1. Yes 2. No	
111	Educational status	1. Illiterate (can't read and write) 2. Can read and write 3. Primary school (grade 1-8) 4. Secondary school (grade 9-12) 5. Some college or technical school6. 6. College graduate or above 7. Other (please specify) _____	
112	Occupational status (main source of income)	1. Farmer 2. Daily laborer 3. Merchant 4. Civil servant 5. Student 6. Housewife 7. Unemployed 8. Other (please specify) _____	
113	Marital status	1. Single 2. Divorced/separated 3. Widowed 4. Married 5. living together	If 1,2,3, skip to Q116

114	Husband education status	1. Illiterate (can't read and write) 2. Can read and write 3. Primary school (grade 1-8) 4. Secondary school (grade 9-12) 5. Some college or technical school6. 6. College graduate or above 7. Other (please specify) _____	
115	Husband Occupational status (main source of income)	1. Farmer 2. Daily laborer 3. Merchant 4. Civil servant 5. Student 6. Housewife 7. Unemployed 8. Other (please specify) _____	
116	Family size		
117	Monthly income in birr		
118	How many minutes do you travel to get to health facilities	1. 15 minutes 2. 15-30 minutes 3. More than 30 minutes	

Part 2. Household socio-economic status (Wealth Index).The next questions ask about your household assets, services and housing conditions .please circle your possible answer within the response box.

Section 2: Household assets & services – In answering the questions below please think of assets & services available in your household

No.	Questions	Responses	Skip
201	Which of the following does your household have? (*Ask one by one)*	1. Television 1. Yes 0. No 2. Radio/tape recorder 1. Yes 0. No 3. Mobile telephone 1. Yes 0. No 4. A chair 1. Yes 0. No 5. A table 1. Yes 0. No 6. A kerosene lamp 1. Yes 0. No 7. Refrigerator 1. Yes 0. No 8. Electric stove 1. Yes 0. No 9. A bed with cotton/sponge/spring mattress 1. Yes 0. No 10. An electric mitad 1. Yes 0. No 11. A watch/ clock 1. Yes 0. No	

202	Which of the following does your household have? (*Ask one by one)*	1. Animal-drawn cart 1. Yes 0. No 2. Bicycle/motorcycle 1. Yes 0. No 3. Car / truck 1. Yes 0. No 4. Bajaj 1. Yes 0. No	
203	Do you own any agricultural land?	1. Yes 2. No	if No skip to 205
204	How many (LOCAL UNITS) of agricultural land do members of this household own?	Local units |__|__|	
205	Does this household own any livestock, herds, other farm animals, or poultry?	1. Yes 2. No	if No skip to 207
206	How many of the following animals do you keep? (Interviewer: if household does not own a particular item, record "00" against that item.)	1. Milk cows, oxen or bulls |__|__| 2. Chickens |__|__| 3. Goats |__|__| 4. Sheep |__|__| 5. Horses ,donkey, or mule |__|__| 6. Beehives |__|__|	

207	What are the main materials of the roof of the house?	1. Thatched grass 2. Leaf/earth/mud/cow dung 3. Wood plunks, cardboard 4. Finished roof (iron tin finished wood, cement, ceramic) 5. Other (specify) _____	
208	What are the main materials of the floor of the house?	1. Mud 2. Dung 3. Wood Plunk 4. Ceramic tile 5. Cement 6. Palm/bamboo **7.** Other (specify) _____	
209	What are the main materials of the Walls of the house? (observe)	1. No walls 2. Wood with grass 3. Wood with mud 4. Plywood, cardboard 5. Finished wall with cement, brick, stone with cement 6. Other (specify) _____	

210	How many rooms in this household are used for sleeping?	_____ in number	
211	What is the common source of potable water for your household?	1. Pipe water piped into dwelling 2. Pipe water piped to yard 3. Public Tap/Stand Pipe 4. Borehole 5. Protected well 6. Unprotected well 7. Protected Spring 8. Unprotected Spring 9. Rain water 10. Tanker truck 11. Other (specify) _____	
212	What kind of toilet facility do members of your household usually use?	1. None 2. Private Pit 3. Pit shared with other households 4. Private VIP 5. VIP shared with other households 6. Private flashed with water 7. Share flashed with water 8. Other specify) _____	
213	What type of fuel does your household mainly use for cooking?	1. Electricity 2. Solar 1. Kerosene 2. Animal dung 3. Charcoal 4. Shrubs/grass 5. Other specify) _____	

Section 3: Reproductive health related characteristics of respondents			
No	**Questions and filters**	**Coding categories**	**Skip**
301	Have you ever been pregnant?	1. Yes 2. No	If No skip to 501
302	What were the outcome of the pregnancy(ask for each item and put numbers on the space	1. Total pregnancy _____ 2. Total live birth _____ 3. Abortion _____ 4. Still birth _____ 5. .Other specify _____	
303	Did you have ANC in the last pregnancy?	1. Yes 2. No	If No skip to 306

304	If yes at what month did you start antenatal care?	_____ in month	
305	How many times have you visit antenatal care?	1. Once 2. Twice 3. Three times 4. Four and more	
306	Did you last pregnancy led to any complication?	1. Yes 2. No	If No skip to 308
307	If yes, what problems did you experience?	1. Bleeding 2. Swelling of hand and face 3. Blurring of vision or Headache 4. Prolonged labor 5. Convulsion 6. .Retained placenta 7. Other (specify) _____	
308	Where did you deliver your recent baby?	1. Health facility 2. Home 3. Else where	
309	Who attended your last delivery?	1. Health care provider 2. Trained Traditional Birth Attendant 3. Untrained Traditional Birth Attendant 4. Family member 5. Other (specify) _____	
310	Have you ever deliver in health facility other than your recent delivery?	1. Yes 2. No	If No skip to 401
311	If yes how many times?	_____ times.	

Section 4: Current pregnancy			
No	**Questions and filters**	**Coding categories**	**Skip**
401	Now I would have some question about your current pregnancy? Gestational age in month	_____ Month.	
402	How many months pregnant were you when you first received antenatal care for this pregnancy?	1._____Months 2. Don't know	
403	How many times do you receive ANC during this pregnancy?	1. _____Number of times.	

		2. don't know	
404	Did you experience any problems with your current pregnancy?	1. Yes 2. No	If No skip to 406
405	If yes, what problems did you experience?	1. vaginal bleeding 2. swelling of hand and face 3. blurred vision 4. preterm labor 5. convulsion 6. Other (specify) _____	
406	What your Source of pregnancy related Information pregnancy? More than one answer is possible	1. Health care provider 2. Health extension workers 3. Health development army 4. Fellow pregnant women 5. Family members 6. Mass media 7. I had no information 8. Other (specify) _____	
407	Is this pregnancy planned?	1. Yes 2. No	

Section 5: Maternal Health Literacy Assessment			
Self-Care Knowledge to Prevent Problems during pregnancy			
No	**Questions and filters**	**Coding categories**	**Skip**
501	Did you receive iron/folic acid during your pregnancy?	1. Yes 2. No	
502	Do you Know how to take iron folic acid supplement pills?	1. Yes 2. No	If No skip to 505
503	What is the Use of iron folic acid supplement	1. For cognitive development of fetus 2. Prevent LBW 3. Prevent birth defects 4. Prevent anemia	
504	During the whole pregnancy, for how many days did you take t iron folic acid supplement pills? Tablets	_____days.	
505	Do you Know the side effects of iron/folic acid pills?	1. Yes 2. No	If No skip to 507
506	Please tell me any side effects of the iron pill you know of?	1. Nausea 2. Constipation 3. Black Stools 4. Other (specify)	

507	During your antenatal care, did the health care provider recommend you sleep under a mosquito net?	1. Yes 2. No	
508	Do you sleep under a mosquito net?	1. Yes 2. No	
509	What are some things you learned in ANC that helped you to prevent problems during your pregnancy?	1. Rest often 2. Sleep under a mosquito net 3. Eat an extra meal every day 4. Drink plenty of fluids 5. Take iron and folic acid tablets 6. Go to ANC visits 7. Practice safe sex Watch for problems and report to health facility 8. Other (specify)	
Danger sign during pregnancy			
510	Do you Know any danger signs that should warn you about problems or complications during pregnancy?	1. Yes 2. No	If No skip to 601
511	Please tell me any signs of complications (danger signs) that you know of. Check all responses the client mentions. You may probe with "anything else"?	1. Vaginal Bleeding 2. Fever 3. Pain in breasts or abdomen 4. Swollen face or hands 5. Headache or blurred vision 6. Reduced or no fetal movement 7. Other (specify) _____	
512	What do you do if you experienced any of the signs of complications?	1. Go to health facility 2. Go to traditional birth attendant 3. Go to faith leaders 4. Stay home 5. Nothing 6. Other (specify) _____	
Section 6: Birth Preparedness and Complication Readiness during pregnancy			
601	During your antenatal visit were you told about birth preparedness plan?	1. Yes 2. No	If No skip to 603
602	If yes, tell me some of the things you did to prepare for the delivery?	1. Arranged for emergency transport if needed 2. save money 3. prepare supplies needed for birth 4. identify potential blood donor 5. identify place of birth 6. identify people to support during after birth 7. Other (Specify) _____	

603	Did you talk to your health care provider about where you planned to delivery your baby?	1. Yes 2. No	
604	Where did you PLAN to deliver this baby?	1. Hospital 2. Health center 3. Clinic 4. Home 5. Don't know 6. Other (Specify) _____	
605	Did the antenatal care influence you on where to deliver? _____	1. Yes 2. No	
606	Do you know any (danger signs) complications during or immediately following childbirth?	1. Yes 2. No	If No skip to 701
607	If yes, what danger signs do you know?	1. Excessive bleeding 2. Fever 3. Retained placenta 4. Prolonged labor 5. Other (Specify) _____	

Section 7: Breast feeding and family planning			
No	**Questions and filters**	**Coding categories**	**Skip**
701	How long after birth did you think you should start breast feeding?	1. Immediately (as soon as possible after birth) 2. Hours 3. Days 4. Month 5. Other (specify) _____	
702	Do you think you should give the first yellowish milk to the baby?	1. Yes 2. No	
703	How often do think you should breast feed your baby?	Every _____ hour.	
704	How long should you feed your baby only breast milk that is, that you do not give your baby any fluids or food other than breast milk?	1. After delivery 2. In the first three days 3. Between 4-6 months 4. After 6 month 5. Don't know. 6. Other (specify) _____	
705	During antenatal care did the health care provider talk with you about using family planning after the birth of your baby?	1. Yes 2. No	If No skip to 708
706	Do you plan to use family planning?	1. Yes	

		2. No	
707	What method of family planning did you plan to use?	1.LAM 2.Pills 3.Depo-Provera 4.IUD 5.Abstinence 6.Implanon 7.Condoms 8.Withdrawal	
708	How soon do you plan to get pregnant or have another baby after you deliver this one??		

Annex 5፡

ክፍል አንድ፡- የጥናት ማብራሪያ (መረጃ) ቅፅ

ጤና ይስጥልኝ!

_____እባላለሁ። በአዲስአበባ ዩኒቨርስቲ በሕብረተሰብ ጤና ትምህርት የድህረ ምረቃ ፕሮግራም ተማሪ ለሆነች ው ለ ፊኒና አበበ መረጃ ሰብሳቢ ስሆን የምርምር ጥናቱ ዋና አላማ የቅድመ-ወሊድ ክትትል የሚያደርጉ የነፍሰጡር እናቶችን ንቃተ ጤና ለመዳሰስና ለንቃተ ጤናቸው ወሳኝ የሆኑ ነገሮችነ ለማጥናት ነው።ይህንን ማወቃችን በጤና ተቋማት በቅድመ-ወሊድ ክትትል ክፍል ለነፍሰ እናቶች በእርግዝና ጊዜ የሚደረግን የምክር አገልግሎት ለማሻሻል ይረዳናል። ጥናቱም ለማካሄድ የእርሰን ትብብር እንፈልጋለን፡፡ በጥናቱ ለመካፈል ፈቃደኛ ከሆኑ ስለእርሶና ስለእርግዝናዎ፣ በእርግዝና ወቅት ስለሚኖር የእናቶች ንቃተ ጤና ጥያቄዎችን እጠይቅዎታለሁ። በጥናቱ ውስጥ ለመሳተፍ ወይም ላለመሳተፍ ከመወሰነዎ በፊት የጥናቱን ዓላማ፣ ማንኛውም ችግሮች፣ ጥቅማጥቅሞች፣ ሒደትና ከእርስዎ የሚጠበቀው ምን እንደሆነ ልገልፅለዎት እወዳለሁ፡፡

<u>የጥናቱ ዋና አላማ</u>፡- የቅድመ-ወሊድ ክትትል የሚያደርጉ የነፍሰጡር እናቶችን ንቃተ ጤና ለመዳሰስና ለንቃተ ጤናቸው ወሳኝ የሆኑ ነገሮችነ ለማጥናት ነው።

<u>የጥናቱ ሒደት፡-</u> ጥናቱ የሚከናወነው ፊት ለፊት በሚደረግ ቃለ-መጠይቅ ሲሆን ቃለ መጠይቅ አድራጊውም ጥያቄዎችን ከወረቀት እያየ የሚጠይቅዎት ይሆናል፡፡ እርስዎ እንደፈቀዱ በጥናቱ ለመሳተፍ መስማማትዎን በስምምነት ፎረሙ ላይ ከፈረሙ በኋላ ቃለ መጠይቅ አድራጊው ከመጠይቁ ላይ ጥያቄዎችን ተራ በተራ እያነሳ በመጠየቅ የሚሰጧቸውን ምልሾች በመጠይቁ ላይ የሚፅፍ ይሆናል፡፡ ቃለ-መጠይቁ 50 ደቂቃዎች ያህል ሊወስድ ይችላል፡፡

<u>የጥናቱ ጠቀሜታ፡-</u> በጥናቱ በመሳተፍዎ የሚያገኙት ቀጥተኛ ጥቅማ ጥቅም የለም፡፡ ሆኖም ግን የጥናቱ ውጤት በነፍሰጡር እናቶች ና በነፍሰጡር እናቶች ንቃተ ጤና ላይ ለሚሰሩ ተቋማት ማለትም ለአማራ ጤና ቢሮ፣፣ አዲስ አበባ ዩኒቨርስቲ እና ሌሎች የጤና ጥበቃ ሚኒስቴርና መንግስታዊ ያልሆኑ ድርጅቶች የሚደርስ ሲሆን ይህም በነፍሰጡር እናቶች በእርግዝና ጊዜ የሚደረግን የምክር አገልግሎት ለማሻሻልና ጠቃሚ እርምጃዎችን እንዲወስዱ ያግዛቸዋል፡፡

<u>የጥናቱ ጉዳቶች፡-</u> በዚህ ጥናት ላይ በመሳተፍዎ ምንም አይነት ጉዳት የለውም፡፡ ሆኖም ግን ጥያቄዎችን ለመመለስ 40 ደቂቃ ያህል ልንወስድብዎት እንችላለን፡፡

<u>የተሳታፊዎች መብት</u>፡- በዚህ ጥናት ውስጥ ለመሳተፍ ወይም ላለመሳተፍ ሙሉ ነፃነት አለዎት፡፡ የጥናቱ አካል ለመሆን ካልፈለጉ በእርስዎ ላይ ምንም የሚያመጣው ጉዳት የሌለ ከመሆኑም በላይ ምንም አይነት ጥቅም የሚያሳጣዎም አይደለም፡፡ በጥናቱ ላይ መቀጠል የማይችሉበት ነገር ከገጠመዎት በየትኛውም

ሰዓት አቋርጠው መውጣት ይችላሉ። እነደዚሁም ግልጽ ያልሆነልዎት ነገር ካለበየትኛውም ሰዓት መጠየቅ ይችላሉ።

ምስጢራዊነት፡- ለእኔ የሚሰጡኝ መረጃዎች ሁሉ በጥብቅ ምስጢር የሚጠበቁ ሲሆን በተጨማሪም በአስተማማኝና ደህንነቱ በተጠበቀ ስፍራ ይቀመጣሉ። ይህንኑም ለማረጋገጥ ሲባል ስምዎትም ሆነ ሌላ መለያዎ በየትኛውም የመጠይቁ ክፍል ላይ አይሰፍርም። ዋነኛው የጥናቱ አጥኚ ብቻ ዝርዝር መረጃዎችን የሚያውቅ ሲሆነ ጥናቱ እንዳበቃም የሚሰረዝ ይሆናል።

ስለ ጥናቱ ጥያቄ አለዎት? (አዎ ከሆነ ጥያቄውን በትህትና መልስ/ሺ) ጥያቄዎቹን መጀመር እችላለሁ?

1- አዎ (መጠይቁን ቀጥል (ይ)) 2- አይ (አመስግኖ መጠይቁን ማቆም)

ክፍል ሁለት፡ የስምምነት ቅፅ

የጥናቱ ዓላማ፣ ጥቅማጥቅም፣ ጉዳቶች፣ ሒደቶችና ሚስጥራዊነት በሚገባኝ ቋንቋ ተነቦልኝ ተረድቻለሁ። በተጨማሪም በጥናቱ መሳተፍ ሆነ ከጥናቱ በአስፈለገኝ ሰዓት መውጣት ሙሉ በሙሉ በእኔ ፈቃደኝነት ላይ የተመሰረተ መሆኑን ተረድቻለሁ።በዚህ ጥናት ላይ ለመሳተፍ ተስማምቻለሁ። ተሳታፊ፡

ፊርማ (ፊርማ ወይም የጣት አሻራ) ……

ቀን ……..

ለበለጠ መረጃ ወይም ማብራርያ ከፈለጉ የዚህ ጥናት ባለቤት በሚከተለው አድራሻ ማግኘት ይችላሉ።

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ለቀና ትብብርዎ በጣም አመሰግናለሁ!

የጤና ጣቢያው ስም ___

የመረጃ ሠብሳቢ ስም _____ ቀን_____ፊርማ _____

መጠይቁ የተጀመረበት ሠዓት _____መጠይቁ ያለቀበት ሠዓት _____

የሱፐርቫይዘር ስም _____ ቀን _____ ፊርማ _____

ጠቅላላ መረጃ			
	መረጃ የተሰበሰበበት ቀን/ወር/ዓ.ም		
	የመረጃ ሰብሳቢው ኮድ የመጠይቁ ኮድ		
	የተቋሙ ኮድ		
	ክፍል አንድ; ማህበራዊ እና የስነ- ህዝብ መረጃዎች		
ተ.ቁ	**ጥቄዎች**	**ምርጫና የኮድ መደብ**	**ይዝለሉት**
101	ወረዳ		
102	ቀበሌ		
103	የጤና ጣቢያው ስም		
104			
105	ስልክ ቁጥር	የሞባይል_____ የቤት/የባል_____ የጓደኛ/የጐረቤት_____	
106	ዕድሜ (በተጠናቀቀ ዓመት)	_____ዓመት	
107	ቋሚ የመኖሪያ አድራሻዎ የት ነው?	1. በከተማ 2. በገጠር 3. አማራ ክልል ውጭ	
108	ሐይማኖት	1. ኦርቶዶክስ 2. ሙስሊም 3. ኘሮቴስታንት 4. ካቶሊክ 5. ሌላ(ይግለፁ)	
109	ብሔር	1. አማራ 2. ትግሬ 3. ኦሮሞ 4. ጉራጌ 5. ስልጤ 6. ሌላ(ይግለፁ) _____	
110	ትምህርት ቤት ገብተው ተምረው ያውቃሉ	1. አዎ 2. የለም	

111	ለጥያቄ ቁጥር 110 "1" ከሆነ መልስዎ ከፍተኛው ያጠናቀቁት የክፍል ደረጃ ስንት ነው	1. ያልተማረ (ማንበብና መፃፍ የማይችል) 2. ማንበብና መፃፍ የሚችል 3. የመጀመሪያ ደረጃ ያጠናቀቀ(ክፍል1-8) 4. ሁለተኛ ደረጃ ያጠናቀቀ (9-12) 5. ኮሌጅ ወይም የሙያ ት/ት ምሩቅ 6. የኮሌጅ /ዩኒቨርሲቲ ምሩቅ ወይም ከዛበላይ	
112	የስራ ሁኔታ (ዋና የገቢ ምንጭ የሆነውን ይግለፁ)	1. ስራ የሌላት 2. ተማሪ 3. ገበሬ 4. የቀን ሰራተኛ 5. ነጋዴ 6. የቤት እመቤት 7. ተቀጥሮ የሚሰራ 8. የግል ስራ 9. ሌላ (ይግለፁ) _____	
113	ወቅታዊ የጋብቻ ሁኔታዎ ምን ይመስላል?	1. ያላገቡ 2. የተፋቱ/የተለያዩ 3. ባለቤታቸው የሞቱባቸው 4. ያገቡ 5. በጓደኝነት(ከትዳር ውጭ የሆነ) አብረው የሚኖሩ	ያላገቡ የተፋቱ/የተለያዩ /ባለቤታቸው የሞቱባቸው ወደ 116 ይለፉ
114	የባለቤትዎ የትምህርት ደረጃ? (በትዳር ላይ ላሉት ብቻ)	1. ማንበብና መፃፍ የማይችሉ 2. ማንበብና መፃፍ የሚችሉ 3. የመጀመሪያ ደረጃ ያጠናቀቀ(ክፍል1-8) 4. ሁለተኛ ደረጃ ያጠናቀቀ (9-12) 5. ኮሌጅ /ዩኒቨርሲቲ ምሩቅ ወይም ከዛ በላይ	
115	የባለቤትዎ የስራ ሁኔታ (ዋና የገቢ ምንጭ የሆነውን ይግለፁ)	1. አርሶ አደር 2. የቀን ሰራተኛ 3. ነጋዴ 4. የመንግስት ሰራተኛ 5. መንግስታዊ ያለሆነ ድርጅት ሰራተኛ 6. የግል ስራ 7. ተማሪ 8. ስራ ፈላጊ	
116	የቤተሰብ ቁጥር (ቋሚ የቤተሰብ ነዋሪዎች ብቻ	_____	

117	ከቤትዎ እስከ ጤና ጣቢያ/ሆስፒታል በደቂቃ ምን ያህል ይወስዳል?	1. ከ15 ደቂቃ በታች 2. ከ15-30 ደቂቃ 3. ከ30 ደቂቃ በላይ	

ክፍል 2: የቤት ውስጥ ማህበራዊና ኢኮኖሚያዊ ደረጃ (wealth index)
የቤት ሁኔታ፣የሚከተለው መጠየቅ የእርሶን የቤት ሁኔታ የሚቃኝ ይሆናል እባኮዎ መልስዎን በትክክለኛው መልስ ላይ ያክብቡ

ቁጥር	ጥያቄ	መልስ	ይዝለሉት
201	ከነዚህ ውስጥ በቤትዎ ውስጥ የትኛው ይገኛል? (አንድ በአንድ ጠይቅ፣ከ 1 በላይ መልስ ይቻላል)	1. መብራት 1.አለ 0. የለም 2. ራዲዮ /ቴፕሬኮርደር 1.አለ 0. የለም 3. ቴሌቪዥን 1.አለ 0. የለም 4. ፍሪጅ/ማቀዝቀዣ 1.አለ 0. የለም 5. የኤሌትሪክ ምጣድ 1.አለ 0. የለም 6. ሞባይል ስልክ 1.አለ 0. የለም 7. ሰዓት 1. አለ 0. የለም	
202	ከቤተሰብ አባል ውስጥ እነዚህ ያሉት አለ?	1. ሞባይል 1.አለ 0. የለም 2. ሞተርሳይክል 1.አለ 0. የለም 3. ጋሪ 1.አለ 0. የለም 4. ባጃጅ 1.አለ 0. የለም 5. መኪና 1.አለ 0.የለም	
212	ቤተሰቡ የእርሻ መሬት አለው?	1.አዎ 2. የለም	የለም ወደ 214 ይለፉ
213	የቤተሰቡ አባል ምን ያህል የእርሻ መሬት አለው በአካባቢው መለኪያ----------(ይገለጽ)	1.የአካባቢው መለኪያ |__|__|	
214	የቤተሰቡ አባል እንስሳ አለው?	1.አዎ 2.የለም	የለም ወደ 216 ይለፉ
215	ከተዘረዘሩት የእንስሳ መሀል የቤተሰቡ አባል ምን ያህል አለው(የቤተሰቡ አባል እንስሳ የሌለው ከሆነ በሳጥን ውስጥ 00 ይጻፉ)	1. 1.የወተት ላም፣ በሬ፣ኮርማ |__|__| 2. ዶሮ|__|__| 3. ፍየል|__|__| 4. በግ|__|__| 5. ፈረስ፣አህያ፣በቅሎ|__|__| 6. የንብ ቀፎ|__|__|	
216	የቤት ውስጥ ጣሪያ ከምንድነው የተሰራው? (ያለውንበዓይንተመልክቶመመዝገብ)	1. የሳር/ገለባ 2. ከቅጠል፣ጭቃ፣የከብትአዛባ 3. ጣውላ፣ካርቶን 4. ቆርቆሮ፣ብረት፣ሲሚንቶ፣ሴራሚክ 5. ሌላ (ይገለጽ) _____	

217	የቤት ውስጥ መሬት/ወለል ከምንድነው የተሰራው? (ያለውንበዓይንተመልክቶመመዝገብ)	1. አፈር/አሸዋ 2. እበት 3. ወፍራም እንጨት 4. ዘንባባ/ቀርከሀ 5. ሴራሚክ 6. ሲሚነቶ 7. ሌላ(ይገለጽ) _____	
218	የቤት ውስጥ ግድግዳ ከምንድነው የተሰራው? (ያለውንበዓይንተመልክቶመመዝገብ)	1. ግድግዳ የለውም 2. የቀርከሀ/ሳጠራግድግዳ 3. እንጨት ከጭቃ ጋር 4. ድንጋይ በጭቃ 5. ኮምፐልሳቶ/ችፑድ 6. ሲሚንቶ፣ጡብ፣ድንጋይ በሲሚንቶ፣በጠጠር 7. ሌላ(ይገለጽ)----------	
218	ቤተሰቡ የመጠጥ ውሀ የሚጠቀመው ከየት ነው?	1. በቤት ውስጥ ካለ ቧምቧ ውሀ 2. በግቢ ውስጥ ካለ ቧምቧ ውሀ 3. ከህዝብ ቧምቧ/ቦኖ ውሀ 4. ከጥልቅ ጉድጓድ ውሀ/በፖምፕ የሚወጣ 5. ከተጠበቀ የጉድጓድ ውሃ 6. ካልተጠበቀ የጉድጓድ ውሃ 7. ከተጠበቀ የምንጭ ውሀ 8. ካልተጠበቀ የምንጭ ውሀ 9. ከዝናብ ውሀ 10. በቦቴ መኪና ከሚታደል ውሀ	
219	በቤቱ ውስጥ ስንት የመኝታ ክፍልአለ?	_____ በቁጥር	
220	ለምግብ ማብሰያ የሚጠቀሙት ምንድን ነው? (ከ 1 በላይ መልስ ይቻላል)	1. ኤሌክትሪክ 2. እንጨት 3. ቡታጋዝ 4. የእንስሳት ፍግ 5. ከሰል 6. ሌላ (ይገለጽ) _____	

221	የቤተሰቡ አባላት በአብዛኛው ጊዜ የሚጠቀሙበት መፀዳጃ ቤት ምን አይነትነው? (ያለውንበዓይንተመልክቶመመዝገብ)	1. ዉሃ የሚለቅ ከቁሻሻ ማስወገጃ ትቦ ጋር የተያያዘ 2. ዉሃ የሚለቅ ከቁሻሻ ማጠራቀሚያ ጉድጓድ ጋር የተያያዘ 3. ዉሃ የሚለቅ ከሽንት ቤት ጉድጓድ ጋር የተያያዘ 4. ዉሃ የሚለቅ ከሌላ ቦታ ጋር የተያያዘ 5. ዉሃ የሚለቅ ከማይታወቅ ቦታ ጋር የተያያዘ 6. የተዘጋጀ መፀዳጃ የለም/ሜዳላይ 7. 77.ሌላ (ይገለጽ)----------	

ክፍል 2: እርግዝናና ወሊድን የሚመለከቱ ጥያቄዎች			
ተ.ቁ	**ጥያቄዎች**	**ምርጫና የኮድ መደብ**	**ይዝለሉት**
301	በህይወት ዘመኖት አርግዘው ያውቃሉ?	1. አዎ 2. የለም	የለም ከሆነ ወደ 401
302	እስከ አሁን በጠቅላላ የእርግዝናዎት ውጤት ምን ነበር? ስለ እያንዳንዱ ይጠይቁና ቁጥሩን ባዶው ቦታ ላይ ይፃፉ	1. ይሄንን እርግዝና ጨምሮ እስከ አሁን ስንት ጊዜ አርግዘዋል? _____ ጊዜ 2. በሕይወት የተወለዱትን ብቻ _____ ልጆች 3. ውርጃ _____ 4. ሞቶ የተወለደ _____	
303	በቅር በነበረው እርግዝናዎ ወቅት የቅድመ	1. አዎ 2. የለም	የለም ከሆነ ወደ 306 ይለፉ
304	በስንተኛ ወርዎ ላይ ነበር የቅድመ ወሊድ ክትትልዎን የጀመሩት?	_____ ወር	
305	ስንት ጊዜ የቅድመ ወሊድ ክትትል አደረጉ?	1. አንድ 2. ሁለት 3. ሶስት 4. አራትና ከዚያ በላይ	
306	በቅርቡ በነበረው አርግዝናዎ ወቅት ከእርግዝና ከወሊድና ከድህረ ወሊድ ጋር በተያያዘ ችግሮች አጋጥሞት	1. አዎ 2. የለም	የለም ከሆነ ወደ 308 ይለፉ

307	አዎ ከሆነ ምን አይነት ? መጀመርያ አያንብቡላቸው ምናልባት በራሳቸው መዘርዘር ይችሉ እንደሆን)	1. ከማህፀን ከባድ ደም መፍሰስ 2. የእጅ/ፊት ማበጥ 3. የእይታ መደብዘዝ 4. የምጥ ሰአት መርዘም (ከ12 ሰዓት በላይ) 5. ያልተለመደ የሰውነት መንቀጥቀጥ 6. የእንግዴ ልጅ መዘግየት(ከ1 ሰዓት በላይ) 7. ሌላ ከሆነ ይጥቀሱ _____	
308	በቅርብ ወሊድዎ ወቅት የት ነው የወለዱት	1. ጤና ኬላ 2. ጤና ጣቢያ 3. የመንግስት ሆስፒታል 4. ቤት ውስጥ 5. ሌላ ከሆነ ይጥቀሱ	
309	በቅርብ ወሊድዎ ወቅት ማን ነው ያዋለዶት?	1. ዶክትር 2. ጤናመኮነን 3. ነርስ 4. ጤናኤክስቴንሽን 5. የሰለጠነች የልምድ አዋላጅ 6. ያልሰለጠነች የልምድ አዋላጅ 7. የቤተሰቡ አባላት	
310	በቅርቡ ከወለዱት ልጅዎ በፊት ጤና ድርጅት ውስጥ ወልደው	1. አዎ 2. የለም	የለም ከሆነ ወደ 401 ይለፉ
311	አዎ ከሆነ ስንት ጊዜ?	_____ ጊዜ	
	ክፍል 4: ስለአሁን እርግዝና የተመለከቱ ጥያቄዎች		
401	ስለአሁን እርግዝናዎ ጠይቃለሁ እርግዝናዎ ምን ያህል ጊዜ ሆነው?(ከመረጃ መዝገብ የሚረጋገጥ)	_____ወር	
402	በስንተኛ ወርዎ ላይ ነበር የቅድመ ወሊድ ክትትልዎን የጀመሩት?	_____ ወር	
403	ለዚህ እርግዝና ዛሬ ለክትትል ሲመጡ ስንተኛ ጊዜዎ ነው? (ከመረጃ መዝገብ የሚረጋገጥ)	1. አንድ 2. ሁለት 3. ሶስት 4. አራትና ከዚያ በላይ	
በእርግዝናዎ ወቅት ከእርግዝና ጋር የተያያዘ ችግሮች			

404	በእርግዝናዎ ወቅት ከእርግዝና ጋር በተያያዘ ችግሮች አጋጥሞት ነበር?	1. አዎ 2. የለም	
405	አዎ ከሆነ ምን አይነት ? መጀመርያ አያንብቡላቸው ምናልባት በራሳቸው መዘርዘር ይችሉ እንደሆን)	1. ከማህፀን ከባድ ደም መፍሰስ 2. የእጅ/ፊት ማበጥ 3. የእይታ መደብዘዝ 4. የምጥ ያለ ጊዜ መምጣት 5. ያልተለመደ የሰውነት መንቀጥቀጥ 6. ሌላ ይጥቀሱ	
406	በእርግዝናዎ ወቅት ከእርግዝና ጋር የተያያዘ መረጃ የሚያገኙት ከየት /ከማን ነው? (ከአንድ በላይ መልስ መስጠት ይቻላል)	1. ከጤናባለሙያ 2. ከጤና ኤክስቴንሽን ሰራተኛ 3. ከአካባቢ በጎ ጤና መልክተኛ 4. ከሌላ ነፍሰጡር እናት 5. ከቤተሰብ አባል 6. ከሬድዮ 7. ከቴሌቪዥን 8. ከመፅሃፍ 9. ምንም መረጃ አላገኘሁም 10.ሌላ ከሆነ ይጥቀሱ _____	

ክፍል 5:			
በእርግዝና ወቅት ችግርን መከላከል			
ተ.ቁ	**ጥያቄዎች**	**ምርጫና የኮድ መደብ**	**ይዝለሉት**
501	በእርግዝዎ ወቅት የደም ማነስ መድሃኒት/የብረት/አይረን ክኒኖችን ወስደዋል?	1. አዎን 2. አልወሰድኩም	
502	የደም ማነስ መድሃኒት/የብረት/አይረን ክኒኖችን እንዴት እንደሚወሰድ ያውቃሉ?	1. አዎን 2. አላውቅም	
503	የብረት/አይረን ክኒኖችን መውሠድ የሚሠጠው ጥቅም ምንድን ነው? (ከአንድ በላይ መልስ መስጠት ይቻላል)	1. ለፅንሡ አእምሮ እድገት ፅንሡ 2. ክብደቱ እንዳይ ቀንስ ይከላከላል 3. ህፃኑ አካለ ጎደሎ ሆኖ አእንዳይወለድ ይከላከላል 4. ለእናት ከደም ማነስ ይከላከልላታል 5. ሌላ(ይግለፁ) _____	
504	ነፍሡጡር እናት በእርግዝናዋ ጊዜ የብረት/አይረን ክኒኖችን ለምን ያህል ቀናት ነው መውሠድ ያለባት?	_____ ቀናት	
505	የደም ማነስ መድሃኒት/የብረት/አይረን ክኒኖችን የጐንዮሽ ጉዳት ምን እንደሆነ ያውቃሉ?	1. አዎን 2. አላውቅም	ካላወቁ ወደ 508 ይሂዱ
506	በትይዩ ከተጠቀሱት መካከል የሚያውቁትን የጐንዮሽ ጉዳት ምልክት ያድርጉ?	1. ማቅለሽለሽ 2. የሆድ ድርቀት 3. ጥቁር ሠገራ 4. ሌላ (ይግለፁ) _____	
507	በቅድመ-ወሊድ ክትትል ወቅት የጤና ባለሙያዋ/ው በአጐበር ውስጥ እንዲተኙ ነግሮዎታል?	1. አዎን 2. አልተነገረኝም	
508	አጐበር ውስጥ ነው የሚተኙት?	1. አዎን 2. አይደለም	

509	በቅድመ ወሊድ ክትትል ወቅት ከተማሩዋቸው መካከል በእርግዝናዎ ወቅት ችግሮችን ለመከላከል የጠቀምዎት የትኞቹ ናቸው?	1. በቂ እረፍት ማድረግ 2. አጐበር ውስጥ መተኛት 3. በየቀኑ ተጨማሪ ምግብ መመገብ 4. ፈሳሽ በብዛት መጠጣት 5. የደም ማነስ መድሃኒት መውሰድ 6. የቅድመ ወሊድ ክትትል ማድረግ 7. ጥንቃቄ የተሞላበት የግብረ ሥጋ ግንኙነት ማድረግ 8. ችግር ከተፈጠረ ወዲያው ወደ ጤና ተቋም መሄድ 9. ሌላ (ይግለፁ)_____	
በእርግዝናዎ ወቅት ከእርግዝና ጋር የተያያዘ ችግሮች			
510	በእርግዝና ወቅት አደገኛ ምልክቶች የሚባሉትን ያውቃሉ?	1. አዎን 2. አላውቅም	ካላወቁ ወደ 508 ይሂዱ
511	የሚያውቁ ከሆነ ምን ምን ናቸው? ነፍሰጡሯ የጠቀሱትን ምልክት ያድርጉ። ሌላ የሚያውቁትም ካለ በማለት በመጠየቅ እንዲናገሩ ያድርጉ።	1. የደም መፍሰስ 2. ትኩሳት 3. የራስ ምታት እና ብዥታ 4. የፊት እና የእጅ ማበጥ 5. የህፃኑ እንቅስቃሴ መቀነስ ወይም ማቆም 6. ሌላ (ይግለፁ)_____	
512	አደገኛ ምልክት ቢያጋጥምዎት ምን ያደርጋሉ?	1. ወደ ጤና ተቋም እሄዳለሁ 2. ወደ የልምድ አዋላጅ እሄዳለሁ 3. ቤት እቆያለሁ 4. ምንም አላደርግም 5. ሌላ (ይግለፁ)	

ክፍል 6			
ተ.ቁ	**ጥያቄዎች**	**ምርጫና የኮድ መደብ**	**ይዝለሉት**
601	ከጤና ባለሙያዋ/ው ጋር ስለ ወሊድ ዝግጅት ተወያይተዋል?	1. አዎን 2. አልተወያየንም	ካላወቁ ወደ 603 ይሂዱ
602	ከተወያያችሁ በተወያያችሁት መሠረት ምን እንዳዘጋጁ ይንገሩን?	1. አስፈላጊ ከሆነ የድንገተኛ መጓጓዛ አዘጋጅቼያለሁ 2. ገንዘብ አጠራቅሜያለሁ 3. ለህፃኑ የሚሆን ንፁህ አልባሳት አዘጋጅቼያለሁ 4. ደም ካስፈለገኝ የሚለግሰኝ ሰው ለይቼያለሁ 5. ልምድ ያለው የጤና ባለሙያ መርጬያለሁ 6. ለህፃኑ ቤቴን ንፁህ አድርጌያለሁ	
603	የት ለመውለድ እንዳሰቡ ከጤና ባለሙያዋ/ው ጋር ተነጋግራችኋል?	1. አዎን 2. አልተነጋገርንም 3. አላስታውስም	
604	የት ለመውለድ ነው ያሰቡት?	1. ሆስፒታል 2. ጤና ጣቢያ 3. ክሊኒክ 4. ቤት ውስጥ 5. አላውቅም 6. ሌላ (ይግለፁ)	
605	የት ለመውለድ እንዳለብዎ የወሰኑት የወሊድ ክትትል በማድረግዎ ነው?	1. አዎን 2. አይደለም 3. አላውቅም	
606	በወሊድ ወቅት ወይም ከወለዱ በኋላ የሚያጋጥም ችግር ምን እንደሆነ ያውቃሉ?	1. አዎን 2. አላውቅም	ካላወቁ ወደ 701 ይሂዱ
607	ካወቁ፣ ምን አይነት ችግር ያውቃሉ?	1. በብዛት የደም መፍሰስ 2. ትኩሳት 3. የማያቋርጥ ምጥ 4. የተራዘመ ምጥ 5. ሌላ (ይግለፁ)_____	

ክፍል 7: ጡት ማጥባት እና የቤተሰብ ምጣኔ			
ተ.ቁ	**ጥያቄዎች**	**ምርጫና የኮድ መደብ**	**ይዝለሉት**
701	ከወለዱ በኋላ ጡት ማጥባት መጀመር ያለብዎት መቼ ይመስልዎታል?	1. ወዲያው እንደወለድኩ 2. ከሰዓታት በኋላ 3. ከቀናት በኋላ 4. አላውቅም	
702	የመጀመሪያውን ቢጫማ ወተት ወይም እንገር ለጨቅላው መስጠት ያለብዎት ይመስልዎታል?	1. አዎን 2. አይመስለኝም	
703	በየስንት ሰዓቱ ማጥባት ያለብዎት ይመስልዎታል?		
704	የጡት ወተት ብቻ ውሃም ሆነ ሌላ ፈሳሽ ሳይሰጡት የሚያጠቡት ለምን ያህል ጊዜ ነው?	1. ከወሊድ በኋላ 2. ለመጀመሪያ ሦስት ቀናት 3. ከ 4-6 ወራት 4. ከ 6 ወር በኋላ 5. አላውቅም 6. ሌላ (ይግለፁ) _____	
705	በቅድመ ወሊድ ክትትል ወቅት የጤና ባለሙያዋ/ው ከወሊድ በኋላ የቤተሰብ ምጣኔ ስለመጀመር ተወይታችኋል?	1. አዎን 2. አልተወያየንም	
706	የቤተሰብ ምጣኔ ዘዴ ለመጠቀም አቅደዋል?	1. አዎን 2. አላቀድኩም	ካላወቁ ወደ 801 ይሂዱ
707	ምን አይነት የቤተሰብ ምጣኔ ዘዴ ለመጠቀም አቅደዋል?	1. ጡት በማጥባት 2. ኪኒን 3. ዴፖ(በመርፌ መልኩ) 4. አዩዲ (በማህጸን የሚገባ).የሚወሰድ 5. መታቀብ 6. ኢምኘላኖን 7. ኮንዶም	
708	ከወለዱ በኋላ የሚቀጥለውን በቀጣይ መቼ ለማርገዝ አስበዋል?		

Curriculum Vitae

1. Personal Information

- **Name:** Finina Abebe Ware
- **Sex:** Female
- **Email:** Fininaabebe1@gmail.com
- **Address:** Addis Ababa, Ethiopia
- **Tele. (Mobile):** +251 983 360 681

Nationality: Ethiopian

Marital Status: Single

2. Educational Background

- **Sep. 2011 - Jul. 2014:** B.Sc in Public Health Officer, University of Gondar, Gondar, Ethiopia
- **Sep. 2009 - Jul. 2010:** Ethiopian Higher Education Entrance Qualification Certificate (EHEEQC) Addis Ababa, Ethiopia
- **Sep. 2007 - Jul. 2008:** Ethiopian General Secondary Education Certificate (EGSEC) Addis Ababa, Ethiopia

3. Work Experience

- **Oct. 2018 - Present** MPH (health education and health promotion) student in AAU
- **Sep. 2017- Sep 2018** Health officer,Trillum international school AA
- **Jan. 2016 - Aug. 2017:** Health Officer Consultant, GetWell Medical Travel, Addis Ababa, Ethiopia
- **Sep. 2014 -Sep. 2015:** Health Officer, Besheno Primary Hospital, Halaba, Ethiopi**a**

4. Language Skills

	Speaking	Listening	Writing	Reading
English	Excellent	Excellent	Excellent	Excellent
Amharic	Excellent	Excellent	Excellent	Excellent
Affan- Oromo	Excellent	Excellent	Good	Excellent

5. **Thesis** and **Publications**

- **Jun. 2014** **Assessment** of **Prevalence** of **ANC follow up among women in Dabat town, North Gondar Zone, North West Ethiopia**

6. Trainings, Workshop and Involvement

- **Jun. 19 - 30, 2014:** Paediatric Portion , National Comprehensive ART training for Health Officers organized by University of Gondar – CDC Project, Gondar, Ethiopia
- **Mar. 6 - 19, 2014:** Adult Portion, National Comprehensive ART training for Health Officers organized by University of Gondar – CDC Project, Gondar, Ethiopia

Involvements

- **2013 - 2014:** Member and Auditor, Public Health Association, Gondar University, Gondar, Ethiopia

7. Hobbies

- Reading Books and Attending Religious Gatherings
- Voluntary Activities

8. Reference

- Dr. Tigist Tesfaye, Dr, General Practitioner, Petros Hospital, AddisAbaba, Ethiopia,

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- Mr. Aklew Adane, M.P.H Lecturer, Gondar University, Gondar, Ethiopia

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Assurance of principal investigator

The undersigned agrees to accept responsibility for the scientific ethical and technical Conduct of the research.

Name of the student: _____

Signature: _____

Date: _____

Approval of the primary Advisor

Name of the primary advisor: _____

Signature: _____

Date: _____