



DEBREBIRHAN UNIVERSITY
COLLEGE OF HEALTH SCIENCE
DEPARTMENT OF PUBLIC HEALTH

FULL TITLE OF THE RESEARCH PROJECT KNOWLEDGE ABOUT OBSTETRICS DANGER SIGNS AND ITS ASSOCIATED FACTORS AMONG PREGNANT WOMEN IN ANGOLELA TERA DISTRICT,NORTH SHEWA,ETHIOPIA

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ASSOCIATED FACTORS AMONG PREGNANT WOMEN IN ANGOLELELA
TERA DISTRICT,NORTH SHEWA,ETHIOPIA

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**Knowledge about obstetric danger signs and its associated factors among pregnant women
in Angolela Tera woreda, North shewa, Ethiopia**

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Acronym/Abbreviations

ANC	Antenatal Care
EDHS	Ethiopia Demography Health Survey
FMOH	Federal Ministry of Health
IEC	Information Education Communication
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
PRMR	Pregnancy Related Maternal Mortality
SDG	Sustainable Development Goal
TBA	Traditional Birth Attendant
UN	United Nation
HEW	Health Extension Worker

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Abstract

Background: All pregnant women are at risk and can face problems at any time during or following pregnancy and child birth which can cause death of mothers. Around 15% of pregnant women develop a potentially life-threatening obstetrics complication that calls for skilled care and obstetrical intervention to survive.

Objective: The aim of this study was to assess knowledge about obstetrics danger signs and its associated factors among pregnant women in Angolela Tera woreda, North Shewa, Ethiopia.

Methods: A community based, cross-sectional study was conducted from April 1-30, 2019. Data on pregnant women was collected using a pre-tested and interviewer administered structured questionnaire from 563 women using Stratified sampling followed by cluster sampling technique. Data was entered into Epi data version 3.1 and it was exported to SPSS version 20 for analysis. Descriptive statistics was done to determine knowledge about obstetric danger signs and Bivariate and multivariate logistic regression was used to identify factors associated with knowledge about obstetric danger signs.

Results: A total of 563 pregnant women were enrolled in the study with the response rate of 100%. The study participants from selected rural kebeles constituted 85.25%. Only 211 (37.5%) pregnant women were knowledgeable about obstetric danger signs. Urban residence [AOR = 2.01; 95% CI (1.02, 5.65)], women who had pregnancy conference [AOR = 5.31; 95% CI (2.8, 10.1)] and formal education [AOR = 4.01; 95% CI (2.35, 7.38)] were associated with being knowledgeable about obstetric danger signs.

Conclusion and recommendation: A significant proportion of pregnant women were not knowledgeable about obstetric danger signs. This indicates that lack of recognition may lead to delay in seeking care. Increasing knowledge of key danger signs, creating and promoting pregnancy conference participation need to be continuously done at the health facility and the community as it makes ready women and their families for prompt and appropriate decisions and measures in case of obstetric danger sign.

Keywords: Knowledge, obstetrics danger signs, pregnant women, Angolela Tera.

1. INTRODUCTION

1.1. Background

Danger sign of obstetric complications is one aspect of obstetric problem recognized at the individual, family and community level. Obstetric complications occurred during pregnancy (such as vaginal bleeding, swollen hands/face, decreasing fetal movement and blurred vision), during labor and child birth (severe vaginal bleeding, pro-longed labor, convulsions, and retained placenta), and during post-natal period (vaginal bleeding following child birth, loss of consciousness after childbirth, and fever) (1).

Most obstetrics danger signs are uneventful that lead to all pregnancies are at risk and around 15% of pregnant women develop a potentially life-threatening obstetrics complication that calls for skilled care and obstetrical intervention to survive(2).

Most obstetrics complications that results in maternal deaths are unpredictable, and their onset can be sudden and severe. The complications can lead to maternal death without any warning during pregnancy and childbirth. About 800 women die due to obstetric related complication during a time of pregnancy and childbirth-in the world every day, which is unacceptably high, and mainly found in rural and poorer communities(3).

The global Maternal mortality ratio (MMR) fell by nearly 44% over the past 25 years(4). However, Ethiopia has so far reduced maternal mortality by 69% from the 1990s estimate with annual reduction rate of 5% or more(5). Nowadays, maternal mortality in Ethiopia is significantly reduced. According to 2016 Ethiopia Demographic Health Survey the pregnancy-related mortality ratio (PRMR)is 412per 100,000 live births(6).

Knowledge of the danger signs of obstetric complications is an essential first step in accepting appropriate and timely referral to obstetric care, for which early recognition of the problem at the pregnant mother and family level. It is therefore of vital importance that pregnant women and their families are aware of the danger signs of obstetric complications to enable them to respond appropriately to complications that may arises(1).

The national reproductive strategy of Ethiopia has given emphasis focuses on the need to empower women, men, families and communities to recognize obstetric related risks, and to take responsibility for developing and implementing appropriate response to them. Raising the awareness of pregnant women on the obstetric danger signs would improve early detection of these problems and reduces the delay in deciding to seek obstetric care. Thus, one of the key strategies for reducing maternal mortality is increasing knowledge of the obstetric danger signs among women, family and community at large. According to this strategy, by 2010 E.C the target plan by federal ministry of Ethiopia (FMOH),80% of all families including mothers should recognize at least three danger signs associated with pregnancy related complications(7).

Evidences in Amhara region indicated that the utilization and continuum of maternal healthcare services and, maternal knowledge of obstetrics danger signs were ineffective(8). Despite the fact that emphasis is given by the national strategy to raise knowledge of obstetric danger signs, different literatures show that little is known about the current level of knowledge and the influencing factors in Ethiopia.

1.2. Statement of the problem

Achieving the Sustainable development goal target of a global Maternal Mortality Ratio (MMR) below 70/100,000 will require reducing global MMR by an average of 7.5% each year between 2016 and 2030. This will require more than three times the 2.3% annual rate of reduction observed globally between 1990 and 2015. The supplementary national target is that no country should have an MMR greater than 140/100,000 live births (a number twice the global target) by 2030. This target will be achieved by increasing maternal knowledge about obstetrics danger signs during antenatal care visit and receiving skill care by skillful health professionals(9, 10).

WHO report showed that between 1990-2015, the estimated lifetime risk of maternal mortality due to obstetrics complications in high-income countries was 1 in 3300 in comparison with 1 in 41 in low-income countries. About 73% of all maternal deaths were due to direct obstetric causes. The main direct causes of maternal death were Postpartum hemorrhage (27.1%), pregnancy induced or related hypertensive disorders 14%, puerperal sepsis 10.7%, unsafe abortion (7.9%) and other direct causes of death including obstructed labor (9.6%)(4).

The country target of maternal mortality by 2015 was 267/100,000, but Ethiopia didn't achieve this target and a new national target has set to reduce maternal mortality to 199/100,000 live birth by the end of 2020 and it will be achieved by creating awareness of pregnant mothers about obstetrics danger signs during pregnancy conference at each kebele(11)

Trends and causes of maternal mortality in Ethiopia is still high(12). This is due to lack of information about obstetrics danger signs and inadequate knowledge about the usage of antenatal visit. In high-income countries, almost all women attend at least four antenatal care visits and receive care by skilled health worker during childbirth and postpartum, whereas in low-income countries including Ethiopia, only 40% of all pregnant women received the recommended antenatal care visits(13).

Study conducted in Madagascar in 2018, knowledge of at least one obstetric danger sign varied, about 80.9%, 51.9% and 50.8% of women knew danger sign(s) during pregnancy, delivery and postpartum respectively. Participation in the maternal health intervention, higher household

income, and receipt of information about danger signs during pregnancy were associated with knowledge of danger signs during delivery(14)

Women status of knowledge on danger sign during pregnancy, during delivery and after delivery is low. Secondary education increased the likelihood of awareness of obstetric danger signs by six-fold when compared to illiterate women(15).

Lack of knowledge on danger signs, cultural and traditional beliefs, trust in Traditional Birth Attendant(TBA), lack of decision making power of women, previous negative experiences with health facilities and transport problems in inaccessible areas are the main contributing factor for the delay on reaching care facilities(16)

Study conducted in Ethiopia, Aleta Wondo Woreda 30.4%,41.3% and 37.7% knew at least two danger signs during pregnancy, childbirth and postpartum period, respectively. These findings indicated a very low awareness of danger signs of obstetric complications(17)

Insufficient knowledge about danger signs of obstetrics among women, families, and birth attendants in developing world are one of the major contributing factors for maternal deaths. Women with knowledge on obstetrics danger signs promote appropriate health seeking attitude and counseling on the obstetric danger signs of its unpredictable complications and its appropriate managements are crucial. So that, women are expected to receive Health education about pregnancy including outcomes, danger signs during pregnancy, nutrition and family planning and other services when they attend clinic for ANC(6, 18).

Most studies were done in urban and institutional based, factors and their significance vary from area to area and within a period of years, maternal health continues to be a public health priority and a new national target has been set to reduce maternal mortality. No study literature or findings could be found research conducted in Angolela Tera. This motivated me to assess the knowledge of pregnant women in Angolela Tera, North Shoa, and Amhara, Ethiopia about the danger signs of obstetric complications.

1.3. Significance of the study

According to different literature, level of knowledge on obstetrics danger signs remains low, which may be an important factor in reducing maternal mortality as women will recognize the danger signs and seek medical care on time, therefore, this study among pregnant women in Angolela Tera Woreda to find out their knowledge about obstetrics danger signs.

It will be hoped that the information generated from this study will be used by Maternal and Child Health (MCH) programs to give evidence-based IEC to women in Angolela Tera Woreda and increase knowledge about obstetrics danger signs in pregnancy among women and Communities and thus help them to seek medical care urgently when they experience the danger signs. Study results will assist health care providers to plan the care according to the needs of the communities and education concerning obstetrics danger signs

This will hopefully help to reduce the maternal mortality in the district. It is also hoped that this study will bring out the perceptions of women towards danger signs in pregnancy and will therefore assist in planning evidence-based programs for the women and their communities and help reduce maternal mortality which may hinder women and their communities from seeking care when they experience danger signs in pregnancy.

The study will be beneficial to the community where it will be conducted as the respondents will be given information and have their questions concerning danger signs in pregnancy, answered. Study results will assist health care providers to plan the care according to the needs of the communities and render evidence based care and education concerning danger signs in pregnancy.

The information from the research will also help to identify gaps in the provision of ANC which will call for interventions that will encourage women to attend ANC. This information will also help to improve on the ways of providing information to Antenatal mothers that will help to increase awareness on danger signs in pregnancy. This study therefore aims to fill this gap by assessing the current status of knowledge danger signs and its associated factors among pregnant women in Angolella Tera district, North Shewa, Amhara, Ethiopia

1.4. Literature Review

Study conducted in South-East Asia, most societies within the country have little or no encouragement or support for women with pregnancy complication to seek appropriate care. Women as well as family members are often not aware of the life threatening danger signs of pregnancy or birth related complications, on either mother or newborn(19).

Factors that prevent women from receiving or seeking care during pregnancy and childbirth are poverty, distance, lack of information, and cultural practices(20)

1.4.1 Knowledge of danger signs during pregnancy, labour and delivery among pregnant women.

Study in Nepal showed that, 66.0% had good knowledge on obstetric danger signs. Most of the respondents (89.3%) knew that vaginal bleeding is a danger sign during pregnancy, whereas blurred vision was another danger sign identified by 64.0% of respondents. Majority of the respondents (79.0%) knew that prolonged labour is a danger sign during childbirth and 58.7% identified that fits was another danger sign. Most of the respondents (88.3%) knew that severe vaginal bleeding is a danger sign during post partum period(21)

Study conducted in India in 2018 among pregnant women, 35.7% of respondents were knowledgeable about danger signs of pregnancy. The most danger signs during labour were severe bleeding (71.5%), retained placenta (68.6%), edema hands/feet/face (64.5%) and convulsions (57.6%) labour lasting for more time (54.2%). Danger signs in postnatal period: severe bleeding per vagina (74.0%), foul smelling discharge per vaginum (72.6%), and high fever (68.6%)(22)

A study conducted in rural Uganda revealed that, 52% of women knew at least one key danger sign during pregnancy, 72% during delivery and 72% during postpartum. Only 19% had knowledge of 3 or more key danger signs during the three periods(23)

Study in, Tanzania showed that, 31.3% were knowledgeable for obstetrics danger signs,(15). Another study conducted in Southeast Nigeria showed, the most recalled danger sign by the clients was bleeding before labour, while the least recalled sign was swollen hands and feet,. A

significantly higher proportion of clients in rural, had good knowledge of danger signs by recalling four or more signs when compared to urban(24)

Study conducted in Ethiopia, Aleta Wondo Woreda 30.4%, 41.3% and 37.7% knew at least two danger signs during pregnancy, childbirth and postpartum period, respectively. These findings indicated a very low awareness of danger signs of obstetric complications(17)

Study conducted in Raya kobo district in Ethiopia, 46.6% of mothers were knowledgeable about danger signs during pregnancy. On the other hand 27.8% of the mothers were knowledgeable about obstetric danger signs during labour. Similarly,26.4% of the study participants were found to be knowledgeable about obstetric danger signs during postpartum period(25).

A study conducted in Erer district, Somali region, Ethiopia among pregnant mothers indicates, only15.5 % were knowledgeable about obstetric danger signs. Around 31.8 %, 25.5 % and 19.1 % of respondents had mentioned at least two danger signs during labor, pregnancy and postnatal period respectively. The most commonly mentioned danger sign during pregnancy was vaginal bleeding; it was (25%). The commonly mentioned danger signs during labor and child birth were prolonged labor (26%'and excessive bleeding (15%). The most commonly mentioned danger signs of postpartum were excessive bleeding(20%), abdominal pain(10%) and fever(8%)(26).

Similar study in Illu Ababor zone, Oromia region showed that ,Knowledge of pregnant mothers about danger signs of obstetric complications during pregnancy, labour and postnatal periods were (37.3%),(23.3%)and,(3.6%)respectively(27)

1.4.2 Factors associated with knowledge towards obstetrics danger signs

The factors that influence knowledge of obstetrics danger signs can be classified into three broad categories: socio-demographic and economic factors, source of information and obstetrics history related factors.

1.4.2.1. Socio –demographic and economic factors

Across sectional study conducted in Gambia revealed that Educated women are more likely to seek appropriate medical care during pregnancy and delivery(29)

Another study conducted in Arbaminch town, revealed that having secondary and higher education increase knowledge about danger signs in pregnancy and there was also an association with the age of the respondent, monthly income and marital status(30)

Institutional cross sectional study in Gedeo zone, Southern Ethiopia among pregnant mothers, showed that maternal education, paternal education was associated with knowledge of obstetric danger signs. The study demonstrated that women in the age group 25–34 years old were 3.5 times more likely to be knowledgeable of obstetric danger signs in relation with women who were 35 years old and above. Women who can read and write but without formal education was 75% less likely to be knowledgeable about obstetric danger signs compared to women who attended secondary and above education. Women living in urban areas were 3 times more likely to have knowledge of obstetric danger signs compared to those living in rural area’(31)

Study in Mizan Aman General Hospital showed that educational status and occupation of the mother are associated with the level of awareness. As education level increase awareness of the mother also increase, 69% of respondent who were at high school and above were aware,. The study shows government employees are more aware 30.56% than house wives 12.23%(32)

1.4.2.2 Obstetrics history related factors

Study conducted in Debaytilatgin District in Ethiopia, showed that high parity found to be significantly associated with knowledge on danger signs during pregnancy, labour and postpartum. Pregnant women who had ANC follow up were 3.5 times more likely to have knowledge about obstetric danger signs during pregnancy, labour and the postpartum period when compared to those who do not have follow up(33)

Study in Raya kobo Woreda showed that, Mothers’ who visit ANC clinic ≥ 4 times were 11 times more likely to be knowledgeable about danger signs during pregnancy than mothers’ who had only one visit. Mothers’ who gave birth to their last child at health institutions were about two-times more knowledgeable about obstetrics danger signs than their counterparts who gave birth at home(25)

Study conducted in Debarke town showed that parity, formal education and number of ANC visit were significantly associated with awareness on danger signs of pregnancy during labor(34).

Another study in south-west Ethiopia showed, Grandmultiparas were 3 times more likely to be more knowledgeable about obstetric danger signs than primiparas. Pregnant mothers who attended ANC at Health Center were 2 times more likely to be knowledgeable about Obstetric danger signs during pregnancy than those who attended at Health Post. Mothers who have given their last birth at Health facilities were 2.3 times and 2.5 times more knowledgeable about obstetric danger signs during pregnancy and delivery than those who delivered at home respectively. Mothers who were satisfied by the care providers counseling during ANC visit were 3 times and 1.6 times more to be knowledgeable about obstetric danger signs during pregnancy and delivery than those who were attended by unskilled professionals respectively(27)

1.4.2.3. Source of information related factors on obstetrics danger sign

According to the study in Ethiopia, Tsegedie District, having functional radio were found to be independent predictors of knowledge of women about the danger signs of pregnancy and childbirth(35)

Study in Debre Berhan indicated 75.9% of respondents had heard obstetric danger signs during pregnancy and from those mothers 59.2% got information from clinics. 60% of the study participants had got danger signs information from health personnel followed by media, friends and relatives with respective frequencies of 21%, 18.4% and 7% respectively(18).

Study showed on Knowledge of direct obstetric causes of maternal mortality and associated factors among reproductive age women in Aneded woreda in 2017, Variables found to be associated with the dependent variable was source of information (radio) and time taken to health facility is a factor(36).

In summary, not knowledgeable of danger signs and symptoms during pregnancy, labor, delivery, and post-partum contribute to delays in seeking and receiving skilled care. Safe motherhood programs can effectively increase knowledge of danger signs through clinic and community based educational strategies. Recognition of danger signs in pregnancy and subsequently getting medical help can drastically affect maternal and newborn morbidity and mortality .Knowledge of obstetric danger signs increased with age, number of deliveries, number of antenatal visits, when delivery was at a health institution. Many studies revealed age, residence, marital status, occupation, educational level, gravidity, parity, number of family

members, places of previous delivery, attendance of ANC and women with pregnancy complication during last pregnancy associated with knowledge of danger sign of pregnancy.

1.5. Conceptual framework

The conceptual frame work shows the boundary that the study will cover and the relationship which will be proven after going through all research steps. The relationship proposed between three categories of independent variables (socio –demographic and economic factors, obstetrics history related factor and factors related source of information on obstetrics danger sign and the dependent variable; Knowledge on obstetric danger signs). The relation is depicted by one directional effect of the independent variable on the dependent variable and there are also relations between the independent variables.

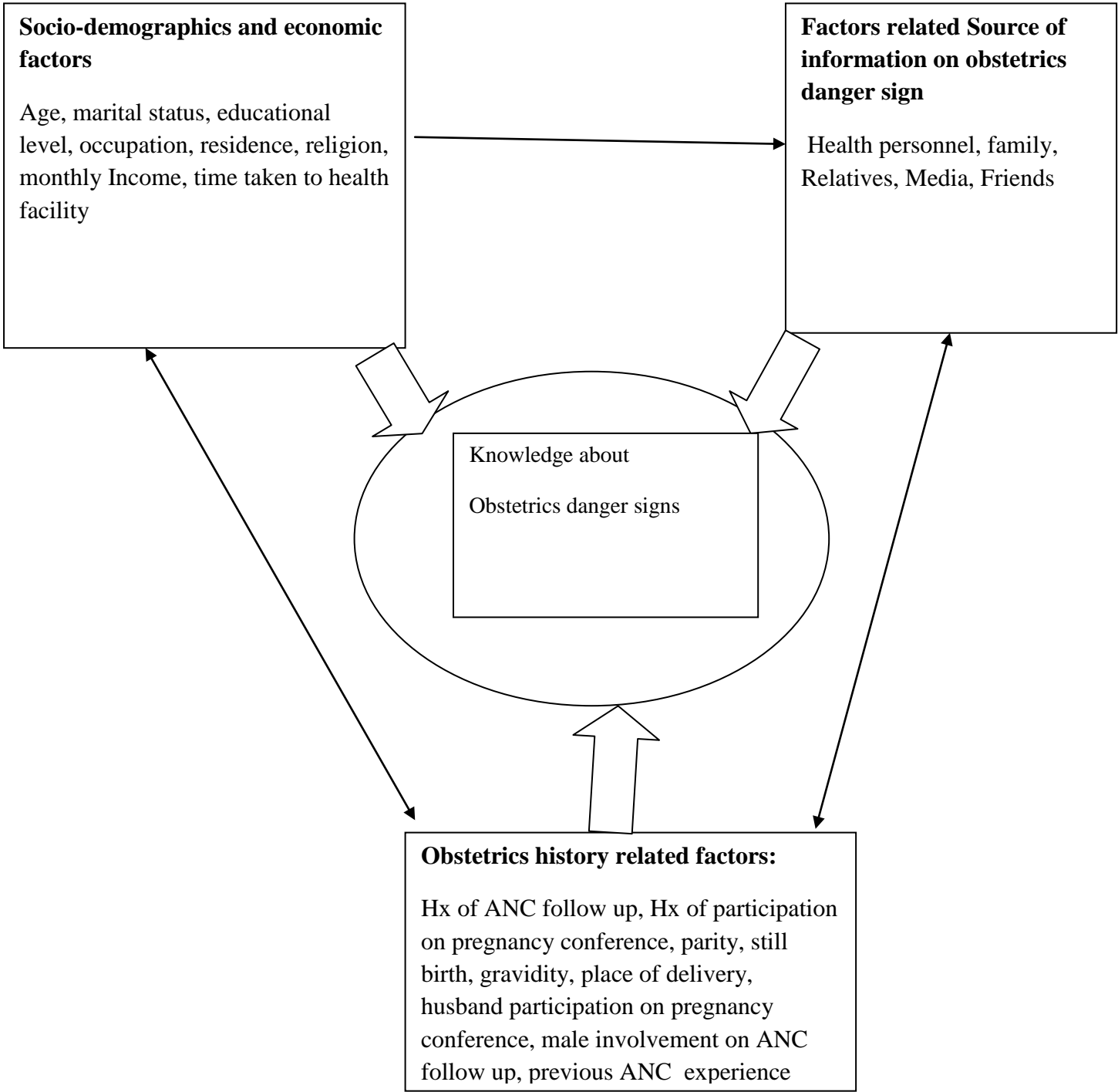


Figure : Conceptual frame work of knowledge about obstetrics danger signs and its associated factors among pregnant mothers in Angolela Tera district, North Shoa Zone, Amhara Region, April 2019.

2. OBJECTIVES

2.1. General objective

To assess level of Knowledge about obstetrics danger signs and its associated factor among pregnant women in Angolela Tera district, Amhara region, Ethiopia, April, 2019.

2.2. Specific objectives

- To determine level of knowledge about obstetrics danger signs among pregnant women.
- To identify factors associated with knowledge about obstetrics danger signs among pregnant women.

3. METHODS AND MATERIALS

3.1. Study area and period

The study was conducted in Angolela Tera district, north -East, Ethiopia. Angolela Tera is located 113km of North East Addis Ababa; the Woreda has an elevation of 2,830 meters above sea level. Two urban and 19 rural kebeles are under the jurisdiction of the Woreda administration. Woreda's population estimation is 98,382 from which around 8,017 residents in town and 90,365 are living in rural area. Around 47,850 and 50,532 are female and male respectively. The expected numbers of women in reproductive age and pregnant women in the Woreda is 23,198 and 3315 respectively. Currently, there are 4 health centers, 3 private clinics, 21 health posts(37). The study was performed between April 1-30, 2019.

3.2. Study design

A community based cross sectional study design was conducted on pregnant women to assess their knowledge about obstetrics danger signs.

3.3. Source population

The source populations were all pregnant women who were living in Angolela Tera Woreda.

3.4 .Study populations

Study populations were pregnant women who are ilving in selected kebeles in Angolela Tera woreda.

3.5. Inclusion and Exclusion Criteria

3.5.1. Inclusion

Pregnant women who are living in the woreda

3.5.2. Exclusion

Pregnant women who couldn't communicate well due to seriously ill and, pregnant health care workers were excluded from the study.

3.6. Sample size determination

A sample size will be determined using single population proportion formula

$$\text{Sample size } n = \frac{Z^2 * p * q}{W^2}$$

Where p- proportion of knowledgeable about obstetrics danger sign

q- Proportion of not knowledgeable about obstetrics danger sign

W- Margin of error =5%

With the following assumptions: the level of obstetric knowledge of danger signs was 21.9% (31) , confidence interval 95 % , degree of precision(d),5 % , design effect 2 and finally adding 5 % non response rate.

$$n = Z^2 pq / d^2$$

$$n = (1.96)^2 (0.219) (0.781) / (0.05)^2$$

$$n = 263$$

Considering 5% of non-respondent rate and design effect 2, **Total sample size was=552**

3.7 sampling procedure

Stratified sampling followed by cluster sampling technique was used to select the study subjects. Initially, the district was stratified in to two urban and 19 rural clusters, and then using simple random sampling method 1urban and 10 rural clusters were selected. Then, in each selected kebele, a preliminary survey was done to register eligible pregnant women. The registration was conducted by the health extension workers in collaboration with district health office. The number of eligible pregnant women obtained during the survey was close to the determined sample size. Therefore, all eligible pregnant women (563) in the selected Kebeles were included in the study

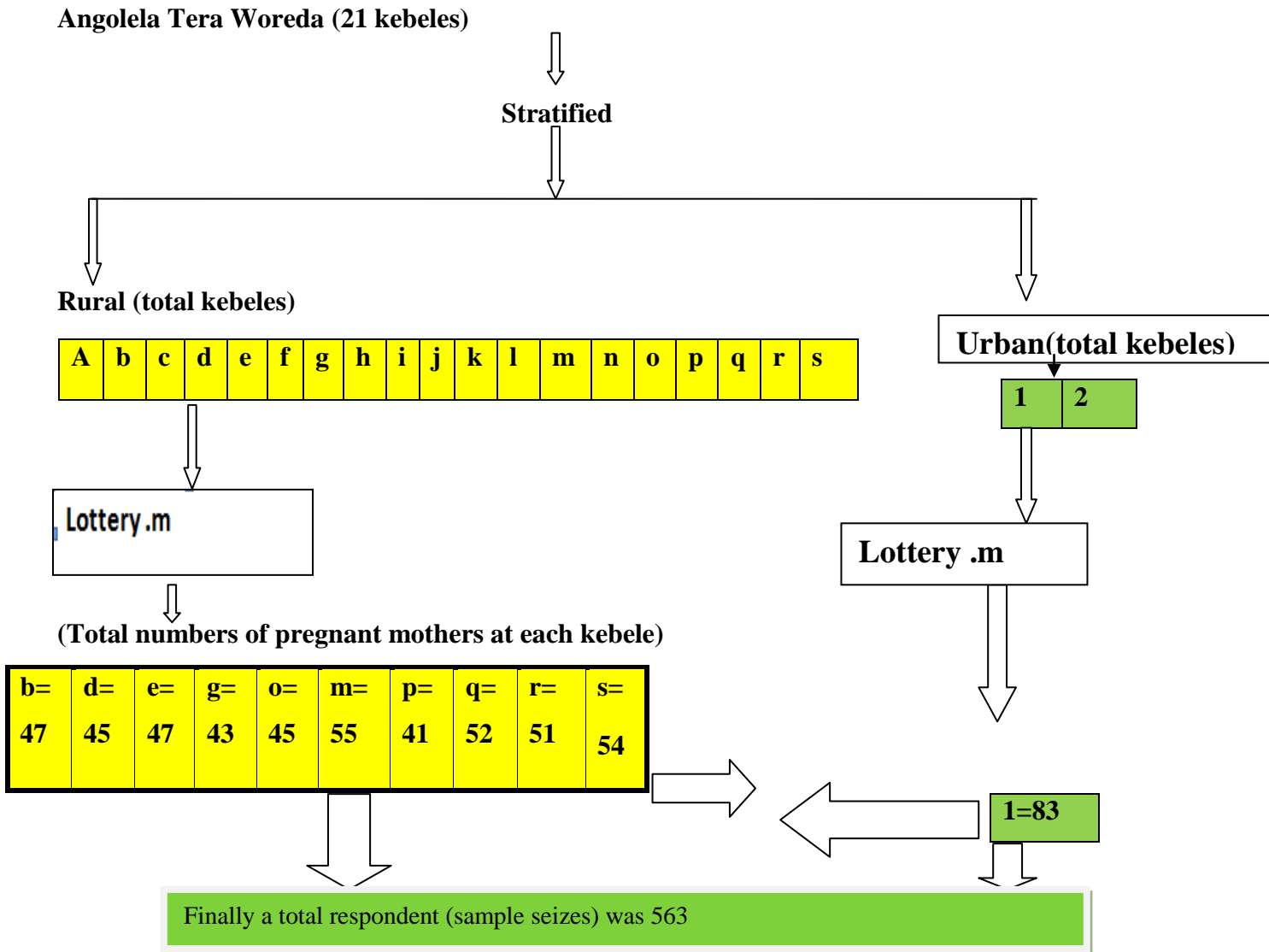


Figure : Diagrammatic presentation of sampling procedure for the study

3.8. Study variables

3.8.1. Dependent variables

Knowledge about obstetrics danger sign

3.8.2. Independent variable

3.8.2.1. Socio- demographic and economic factors:

Age, marital status, religion,

Educational status, monthly income

Residence, occupational status, time taken to reach health facility on foot

3.8.2.2. Obstetrics history related factors;

History of ANC follow up, Parity, gravidity, History of participation on pregnancy conference, place of delivery, Number of ANC follow up, Number of participation on pregnant conference, husband participation on pregnancy conference, male involvement on ANC follow-up.

3.8.2.3. Source of information on obstetrics danger signs related factors

Health professional, family, friend, radio or TV

3.9. Operational definitions

Obstetrics Danger signs: Presence of condition that increases the chances of pregnant woman and/ or her unborn child dying or having poor health during pregnancy, Labour/delivery, postnatal until 6 weeks.

Knowledge: Knowledge of obstetric danger signs means the basic information that the mothers have regarding obstetric danger signs.

Knowledge of women about obstetric danger signs was measured by the total number of correct spontaneous answers to 9 items on knowledge of pregnancy danger signs and 7 items on knowledge of labor and childbirth danger signs and 7 items on knowledge of postpartum danger signs.

Knowledgeable on key danger signs of pregnancy: a woman can be considered as knowledgeable when she can mention at least three key danger signs for pregnancy, labor/childbirth and postpartum spontaneously from each item. A woman can be considered as knowledgeable for

obstetrics danger signs when she can mention at least 9 items from all three phases. The dependent variable was later dichotomized as knowledgeable and not-knowledgeable (31)

Danger signs during pregnancy: Presence of Vaginal bleeding, Swollen hands/face, feet/ankle, Troubled with vision/ blurred vision, Severe headache, Convulsion/fit, No/reduced fetal movement(child does not move, Gush (leaking) of fluid from vagina/ water breaks loss of consciousness, severe pelvic or abdominal pain.

Danger signs during childbirth: Presence of Vaginal bleeding, Convulsion/fit, Loss of conscious, Lab our lasting >12 hrs., Placenta not delivered 30 minutes after baby born,. Baby's hand or feet comes first, Cord comes first of the baby.

Danger sign during puerperium (the first 6weeks after birth):Presence of excessive Vaginal bleeding ,Painful and swollen calf, High fever or feeling hot, Foul smelling vaginal discharge , Difficulty in breathing /shortness of breath, Loss of consciousness, Convulsion/fit(31)

3.10. Data collection tools and techniques

Data was collected through face-to-face interviews with pregnant women. A structured questionnaire was adapted from a safe motherhood questionnaire developed by the Maternal Neonatal Program of JHPIEGO, an affiliate of John Hopkins University (1) and other related literature .An individual who had very good knowledge of both English and Amharic languages translate the English version to local Amharic language for better understanding of the respondents. Eleven diploma nurses and Four Bachelor of Science (BSC) health officers were recruited as data collectors and supervisor, respectively, and were trained for one day, and the sampling procedure was elucidated to them. Pregnant women in the selected clusters; who were absent during the first day of data collection were interviewed in the subsequent days (two times) until the final day of data collection.

3.11. Data quality assurance plan

Before the initiation of the main study pre-test was carried out on 10% of the calculated sample size in urban kebele community which was not selected in the study in order to check understandability, clarity and completeness of the questionnaire. Data collection was carried out by trained Diploma and BSC health officers. The collected data was checked by the supervisor daily for completeness and finally the principal investigator monitored the overall quality of data collection. To control the quality of the data processing, the data was checked for its

completeness before data entry and the cleaning process was done by running simple frequency after data entry for its consistency. The inconsistent data was checked referring the hard copy of the questionnaire

3.12. Data processing and analysis plan

Each questionnaire was checked for completeness, missed values and unlikely responses and then manually cleaned up on such indications. The data was entered on to computer using Epi data 3.1 software, then after data cleaning, it was exported to SPSS version 20. Descriptive statistics such as frequency distribution and some measure of central tendency and dispersion (mean and standard deviation) was computed to describe the major variables of the study. Binary logistic regression was fitted and odds ratio estimated to see the effect of each of the independent variables on the outcome variable. Independent variables whose p-value <0.25 was subjected to multi-variable logistic regression to see the factors associated with the dependent variable. 95% Confident interval was used to determine the strength of association between variables. Results was interpreted as association if p-value <0.05 .

3.13. Dissemination plan of the study

The results of the study will get presented to Debre birhan university college of health science and following which the final edition will be disseminated to Debre Berhan University through hard copies/soft copy. Dissemination of the result will also be made to all health centers in the Woreda and woreda health office through hard/ or softcopies found appropriate. Also, manuscript will get submitted for publication in peer reviewed scientific journal

3.14. Ethical consideration

Ethical approval was obtained from the Research and Publications committee of Department of public health, College of Health Science, Debre Berhan University. A formal letter for permission and support was written to the Angolela Tera woreda Health office and for the selected kebeles. Permission to carry out the study was obtained from woreda Health office. Similarly, Consent from the respective kebeles authorities was obtained prior to commencement of the study. The purpose of the study was clearly explained to concerned bodies. All the study participants was informed the purpose of the study, their right to completely free to choose whether or not to participate, and so written as well as verbal consent was also obtained from

respondents. Confidentiality was maintained and assured by excluding their names from identification of the study subjects. The instruments and procedures was not cause any harm to the study subjects, the community, the data collectors and supervisor, who was involved in the research project.

4. RESULT

4.1 Socio-demographic characteristics of the participants

A total of 563 pregnant women were included in the study. The mean age of the respondent was 27 ± 9 years. Majority of pregnant women were rural dwellers 85.25%, married, 94.7% and orthodox followers, 81.7%. 52.8% of pregnant women were unable to read and write with their educational status. Four hundred seventy four 84.2% participants and 74.45 their husband were housewives and farmers respectively. One hundred fifty nine 28.2 % of respondents claimed that they could reach at health facility within 20 minutes on their foot (Table 1).

Table : Socio demographic characteristics of pregnant women in Angolela Tera Woreda, North shewa Zone, Ethiopia, April 1-30, 2019

Socio-Demographic characteristics Variable	Frequency	Percent
Age in completed years(n=563)		
15-24	212	37.7
25-34	217	38.5
>=35	134	23.8
Marital status(n=563)		
Single	16	2.8
Married	533	94.7
Others*	14	2.5
Religion (n=563)		
Orthodox	460	81.7
Muslim	88	15.6
Others**	15	2.7
Educational status(n=563)		
Unable to read and write	297	52.8
Can read and write(informal education)	56	9.9
Formal education	210	37.3
Occupation(n=563)		
Housewife	474	84.2
Government employee	24	5.2
Private employee	29	6.4
Merchant	36	4.3
Husband Educational status(n=547)		
Unable to read and write	267	48.8
Can read and write(Informal education)	77	14.1
Formal education	203	37.1
Monthly income in Ethio. Birr(n=563)		
≤500	15	2.7
500-1000	74	13.1
1001-3000	405	71.9
>=3001	69	12.3
Husband occupation(n=547)		
Farmer	417	76.23
Government employee	52	9.51
Private employee	38	6.95
Merchant	40	7.31
Residence(n=563)		
Rural	480	85.25
Urban	83	14.7
Time taken from health facility in minutes(n=563)		
>20	404	71.8
<=20	159	28.2

NB.*Divorce and widowed, **protestant and catholic

4.2 Obstetrics characteristics of the respondents

Among the total respondents, 80.5 % of respondents had two and above history of pregnancy. Majority of the respondents, 66.22% have two and above live born children. Twenty nine (6.4 %) respondents had history of still birth. More than half, (56.1%) of the mothers delivered at health facility. Less than half, 47.02% of mothers had ANC follow up their last pregnancy.

In case of current pregnancy's ANC follow up 65.9% of participants had history of ANC follow up, but 198(53.4%) of participants had only one visit. From 371 participants, 59.3% came with their husband at health institutions. Above half 51.9% of women had history of pregnancy's conference participation and 56.51% of their husband participated on conference (Table.2)

Table : Obstetrics characteristics among pregnant women in Angolella Tera woreda, North shewa, Ethiopia, April 01-30, 2019

Obstetrics characteristics Variable	Frequency	Perce nt
Gravidity(n=563)		
1	110	19.54
>=2	453	80.46
Parity(n=453)		
1	84	18.54
2-4	298	65.78
≥5	71	15.67
Place of delivery during last recent child birth(n=453)		
Home☛	199	43.9
Health Facility Φ	254	56.1
Did you receive antenatal care during your previous pregnancy?(n=453)		
yes	212	46.79
no	241	53.2
Do you have ANC follow up during current pregnancy?(n=563)		
yes	371	65.89
no	192	34.10
If yes, number of visits(n=371)		
1	198	53.4
2	62	16.7
>=3	111	29.9
Does your husband come to Health center during your ANC visit?(n=371)		
Yes	220	59.30
No	151	40.7
Have you ever participated on Pregnancy's conference?(n=563)		
yes	292	51.86
no	271	48.13
If yes, No of participations?(n=292)		
1	131	44.9
2	61	20.9
>= 3	100	34.25
Does your husband participate during pregnancy conference?(n=292)		
yes	165	56.51
no	127	43.49

NB. ☛Home by TBA, Family, Health post or Health center or Hospital.

4.3 Source of information of the participant

All participants had one or more source of information about obstetrics danger signs and they assumed those danger signs may occur on pregnant women. The leading source of information was Health care workers which account 60% with 95 % CI (55.95%, 64.05) and only 5.7% had gained information from media (Figure.3)

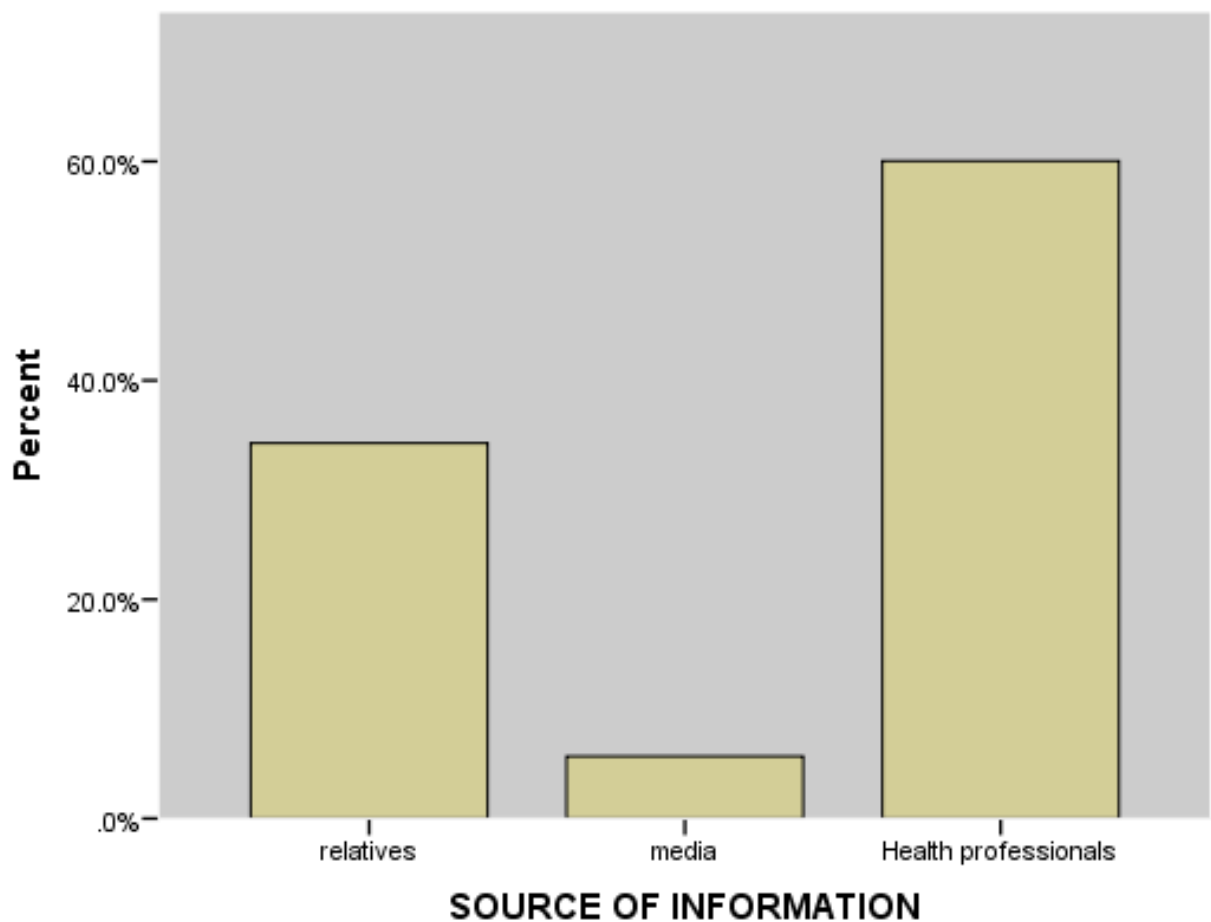


Figure : source of information about obstetrics danger signs among pregnant women in Angolella Tera woreda, North, Shewa, Ethiopia April 01-30, 2019(n=563)

4.4. Knowledge of obstetrics danger signs of participants

The most commonly mentioned danger signs of pregnancy were vaginal bleeding, 76.2%, reduce fetal movement, 54%, gush of clear vaginal fluid 42.6%, severe pelvic pain and abdominal pain 29.7%, loss of consciousness 21.1%, severe headache 17.4% (Table .3)

The most commonly mentioned danger signs of labor and childbirth were vaginal bleeding by 65.9%, prolonged labour by 64.8%, baby's hand or feet comes first by 60.7%, retained placenta by 49.4% (Table.3). The danger signs of post partum period commonly mentioned include severe bleeding by 76.4%, high fever or feels hot by 43.9%, foul smelling vaginal discharge by 31.1%, and loss of consciousness by 20.8% of the respondents (Table. 3)

Table :knowledge of obstetrics danger signs among pregnant women in Angolela Tera woreda, North Shewa zone, April 01-30,2019

Knowledge of obstetrics danger signs	frequency	Percent
Danger Signs of pregnancy		
Vaginal bleeding	429	76.2
Swollen hands/face, feet/ankle	72	12.8
Troubled with vision/ blurred vision	47	8.3
Severe headaches.	98	17.4
Convulsion/fit	55	9.8
No/reduced fetal movement	304	54
Gush (leaking) of fluid from vagina	240	42.6
Loss of consciousness	119	21.1
Sever pelvic and abdominal pain	167	29.7
Others		
Danger signs of Child Birth		
vaginal bleeding	371	65.9
Convulsion/fit	42	7.5
Loss of conscious	64	11.4
Labour lasing >12 hrs	365	64.8
Placenta not delivered 30 minutes after baby born	281	49.4
Baby's hand or feet comes first	342	60.7
Cord comes first of the baby	83	14.7
Danger Signs of postpartum		
Excessive vaginal bleeding	430	76.4
Painful swollen calf	105	18.7
High fever/ feeling hot	247	43.9
Foul smelling vaginal discharge	175	31.1
Difficulty in breathing/shortness of breath	33	5.9
Loss of consciousness	117	20.8
Convulsion/fit	21	3.7
Others		

●Multiple answers is possible

4.5. Over all knowledge of obstetrics danger signs

The overall knowledge status of obstetrics danger sign was 37.5% with 95% CI (33.6, 41.5) specifically, 56.1%, 58.8% and 34.5% of participants were knowledgeable during pregnancy, child birth and postpartum period respectively. Severe vaginal bleeding was the most frequently mentioned danger sign at postpartum period 76.4% (Table.4)

Table : Over all knowledge of obstetrics danger signs among pregnant women in Angolela Tera woreda, North shewa, April 01-30, 2019(n=563)

<u>Knowledge level</u>	<u>number</u>	<u>percent</u>
Knowledge of key danger signs of pregnancy		
Knowledgeable	316	56.1
Not knowledgeable	247	43.9.
Knowledge of key danger signs of child birth		
Knowledgeable	331	58.8
Not knowledgeable	232	41.8
Knowledge of key danger signs of postpartum		
Knowledgeable	194	34.5
Not knowledgeable	369	65.54

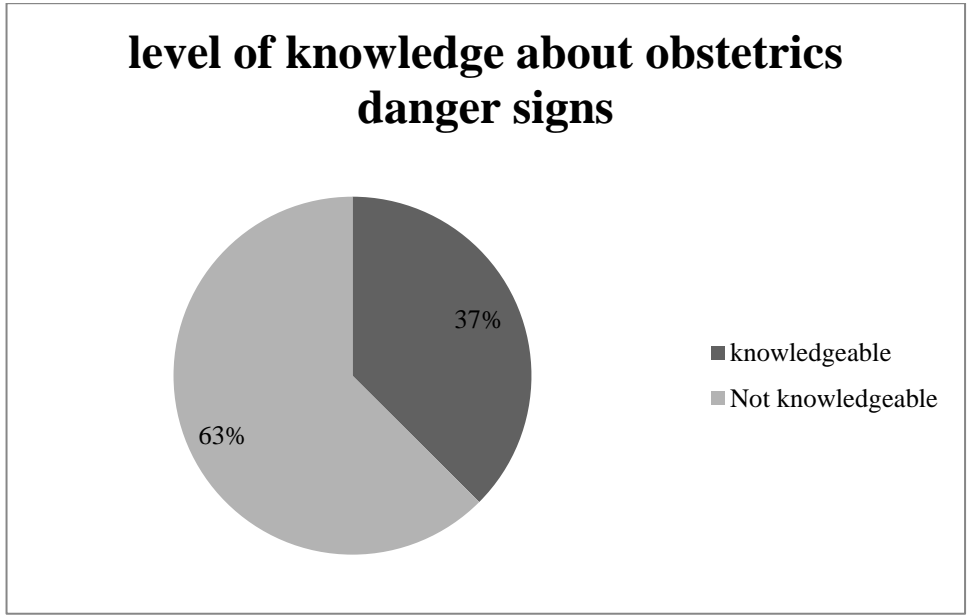


Figure :Level of knowledge on obstetrics danger signs among pregnant women in Angolela Tera woreda, North Shewa, Ethiopia,2019 G.C(n=563)

4.6. Factors associated with knowledge of obstetrics danger signs

The association factors with knowledge of obstetrics danger signs were assessed by bi-variate and multivariable analysis. Variables like husband educational and occupational status,marital status and monthly income were not associated with knowledge in both Bivariate and multivariable logistic regression analysis. But,participants’ occupation, ages, source of information, current ANC follow up status were associated with knowledge in the Bi-variate analysis.. The study finding indicated that educational status of the participants, residence, time taken from health facility on foot, history of pregnancy conference participation and number of pregnancy had statistically significant relationship between pregnant mothers’ knowledge on obstetrics danger signs in both bi-variate and multivariate analysis (p-value<0.04).Pregnant women who had two and above history of pregnancies were 2 times more likely to have knowledge than from primi-gravidae. Participants who attended formal education were 4 times more knowledgeable than who were unable to read and write. Respondents who live in urban were 2 times more likely to be knowledgeable. Pregnant women who participated on pregnancy conference, they were 5 times more likely knowledgeable than who were not. The study also indicated that participants who take less than 20 minutes from their home to health facility on foot were 5 times more knowledgeable than who take more than 20 minutes(Table 5 and 6)

Table : Bivariate logistic regression analysis of Knowledge about obstetric danger signs among pregnant women in Angolela Tera Woreda, North Shewa, Ethiopia,2019(n=563)

Variable		Knowledgeable		COR(95%CI)	P value
		No	Yes		
Age group (Y)	15-24	156	56	1.00	
	25-34	133	84	1.76(1.17,2.65)	0.007
	>=35	63	71	3.14(1.99,4.96)	0.000
Marital status	Single	12	4		
	Married	331	202	1.83(0.58,5.75)	0.5
	others	9	5	1.67(0.35,8.04)	00.53
Education al status	Unable to read and write	237	58	1.00	
	Informal education	38	16	1.72(0.9,3.3)	0.102
	Formal education	77	137	7.27(4.8,10.87)	0.000
Occupatio n	House wife	321	153	1.00	
	Private employee	9	20	4.66(2.07,10.48)	0.000
	Merchant	10	26	5.46(2.57,11.6)	.000
	Governmental employee	12	12	2.1(0.92,4.78)	0.078
Husband educationa l status	Unable to read and write	205	62	1.00	
	Informal education	46	31	2.22(0.86,9.8)	0.29
	Formal education	88	115	4.3(0.74,12.4)	0.31
Monthly income in Eth.birr	<=500	11	4	1.00	
	500-1000	63	11	0.48(0.13,1.78)	0.273
	1001-3000	254	151	1.64(0.51,5.23)	0.407
	>3000	24	45	5.16(0.48,17.94)	0.255
Husband occupation	Farmer	276	141	1.00	
	Private employee	12	26	4.32(0.62,18.7)	0.32
	Merchant	23	17	1.45(0.75,2.8)	0.270
	Governmental employee	28	24	1.68(0.94,3)	0.28
Residence	Rural	322	170	1.00	
	Urban	30	41	2.59(1.56,4.3)	0.004
Time taken from Health Facility in minutes	>=2	303	101	1.00	
	<=20	49	110	6.74(4.49,10.18)	0.000
Gravidity(n_o of pregnancy)	1	90	20	1.00	
	>=2	262	191	3.3(1.95,5.5)	0.000

Do you have ANC follow up during Current pregnancy?					
	no	166	26	1.00	
	yes	186	185	6.35(4.01,10.07)	0.000
Do you participate on pregnancy conference?					
	No	238	33	1.00	
	yes	114	178	11.26(7.3,17.4)	0.001
Source of Information					
	Relatives	163	30	1.00	
	Media(radio or TV)	24	8	1.81(0.74,4.4)	0.19
	Health workers	165	173	5.7(3.65,8.88)	0.000

Table .Factors associated with knowledge Knowledge about obstetric danger signs among pregnant women in Angolela Tera woreda ,North shewa Zone,Ethiopia,2019

Variables	Knowledgeable		COR(95%CI)	AOR (95%CI)	P value	
	No	Yes				
Age group (Yrs)	15-24	156	56	1.00	1.00	0.96
	25-34	133	84	1.76(1.17,2.65)	0.98(.53,1.8)	
	>=35	63	71	3.14(1.99,4.96)	1.2(0.59,2.44)	
Educational status	Unable to read and write	237	58	1.00	1.00	0.2
	Informal education	38	16	1.72(0.9,3.3)	1.68(0.78,3.6)	
	Formal education	77	137	7.27(.8,10.87)	4.01(2.35,6.75)	
Occupation	House wife	321	153	1.00	1.00	0.16
	Private employee	9	20	4.7(2.07,10.48)	2.36(0.85,6.57)	
	Merchant	10	26	5.5(2.57,11.60)	3.07(0.9,6.05)	
	Governmental employee	12	12	2.1(0.92,4.78)	0.67(0.25,1.8)	
Residence	Rural	322	170	1.00	1.00	0.013
	urban	30	41	2.59(1.43,4.3)	2.01(1.02,5.65)	
Time taken to Health facility	>20	303	101	1.00	1.00	0.001
	<=20	49	110	6.74(4.49,10.1)	5.01(2.76,10.18)	
Source of information	Relatives	163	30	1.00	1.00	0.93
	Media(Radio, TV)	24	8	1.8(0.74,4.4)	0.73(0.23,2.3)	
	Health workers	165	173	5.7(0.65,8.88)	1.74(0.96,3.15)	
Gravidity	1	90	20	1.00	1.00	0.04
	>=2	262	191	3.3(1.95,5.5)	2.2(1.2,4.9)	
Do you participate on pregnancy Conference?	No	238	33	1.00	1.00	0.002
	yes	114	178	11.26(7.3,17.4)	5.31(2.8,10.0)	
Do you have ANC follow up during Current pregnancy?	No	166	26	1.00	1.00	0.96
	yes	186	185	6.35(4.01,10.07)	1.02(0.52,2.01)	

NB:Bolded written is p value <0.05

5. DISCUSSION

The level of knowledge about obstetrics danger signs among pregnant women was 37.5%, which is lower than study in Nepal (66%) (21) and higher than study in Tanzania (31.3%), Somali region, Erer district(15.5%) and Gedeo Zone, Yirgacheffe town(21.9%) (24, 26, 31). Still, this study indicates that knowledge of obstetrics danger signs is low when we compare the target plan by federal ministry of health 80%(7).This low result may be due to Health workers especially HEWs were not giving health education for pregnant women as community level.

On the other hand, this study indicated knowledge during pregnancy, child birth and postnatal period was 56.1%, 58.8% and 34.5% respectively. This finding is different with the study in Ethiopia: Aleta Wondo woreda (30.4%, 41.3% and 37.7%), Raya kobo district (46.6%, 27.8% and 26.4%) and Illu Ababor Zone (37.3%, 23.3% and 3.6%) (17, 25, 27) .This difference may be due to relatively high pregnancy conference participation.

In this study the most mentioned danger sign during pregnancy was vaginal bleeding (76.2%) followed by no or reduced fetal movement 54%, during labour/child birth it was vaginal bleeding 65.9% followed by prolonged labour 64.8% and during postnatal period the most mentioned was also vaginal bleeding 76.4% followed by high fever or feels hot 43.9% , which is different finding from it was studied in India: the most mentioned danger sign during pregnancy was vaginal bleeding by 64.5% followed by convulsion 48.9%, during child birth the most mentioned was vaginal bleeding which was 71.5% followed by retained placenta 68.6% and during postnatal period it was also vaginal bleeding 74% followed by foul smelling vaginal discharge 72.6%(22).Even if hypertension disorder of pregnancy(convulsion) is the second cause of maternal mortality, but most participants didn't mention it when we compared the study conducted in India.

On the other hand the same study conducted in Erer district, Somali region, Ethiopia the most mentioned danger sign during pregnancy was vaginal bleeding it was only 25% followed by reduced fetal movement by 14%,during child birth the most mentioned danger sign was prolonged labour 26% followed by abnormal fetal position and during postnatal period it was vaginal bleeding by 20 % followed by fever only 8%(26).This difference might be due to socio-cultural difference and difference in implementation of relevant health intervention activities in the area.

It is believed that if pregnant women and their family recognize danger signs of obstetric complications, they may seek care and it can reduce first delay to seek health service (1). This study showed that only less than half of pregnant women could mention at least three danger signs during postpartum period. The rate of death in this period is higher especially within 36-48 hour of postpartum period (4).

Hence, efforts should be exerted to increase knowledge on danger signs during this postpartum period.

Danger signs that important to identify during the postpartum period include severe bleeding following childbirth, loss of consciousness after childbirth, and fever. Post-partum hemorrhage is a leading cause of approximately 27.1% maternal deaths worldwide (5). In this study only 34.5% of women know at least three danger signs during post-partum period, this indicating that large pro-portion of pregnant women didn't know danger signs during post-partum period.

The level of obstetric danger signs knowledge was 4 times(AOR=4.01;95% CI(2.35,6.75) increased among women attended elementary and above education compared with those with no education. This study is in line with other studies Gambia, Arbaminch town and Debark town (29, 30,34) .This might be explained by the fact that there is no question that educated women can have better information and care for themselves. Education provides better health knowledge, improves the effectiveness of health seeking behavior and enables to take prompt measures when the danger signs arise.

The study found that obstetric danger signs knowledge of women were 2 times (AOR=2.01;95% CI(1.02,5.65) more likely to increase among women living in urban residence in comparison with rural areas. This finding was supported by the findings in Ethiopia: Erer district, Yirgachefee town (26, 31). This is probably because urban areas are exposed to different health care services including higher coverage with health information dissemination.

On the other hand, probably because of better access to health facility and health information, it was pointed out that knowledge of obstetric danger signs was 5 times(AOR=5.01;95% CI(2.76,10.18) more likely to increase among women who travelled less than 20 minutes on foot for health service utilization. This study was in agreement with the findings in Aneded woreda (36).The likely hood of being knowledgeable was 5 times(AOR=5.31;95% CI(2.8,10.00) higher when the women participated on pregnancy conference than who had not. This may be because of pregnant women may grasp more information from health workers with no tiredness because they participate the conferences at their kebele near to their home and It could be also because of health professionals may give short and precise information for the pregnant women and only focused on obstetrics danger signs

Pregnant women who had two and above history of pregnancy, 2 times more likely to have knowledge

than who were primi-gravida. It is congruent that the study conducted in Erer district, Somali region (26). This may be due to the fact women who experiences a previous pregnancy were more likely to differentiate abnormalities and might have learned from their experience. In this study ANC follow up was not significantly associated with knowledge and it is inconsistent with the study conducted in Debaytilatgin district, Ethiopia (33). This may be due to health care workers were not giving information for pregnant women about obstetrics danger signs during their ANC visits.

6. STRENGTH OF THE STUDY

This study was done in the community; it may reflect the actual prevalence of knowledge about danger signs of obstetrics on pregnant mothers in the study area.

7. LIMITATION OF THE STUDY

The wider confidence interval observed with some variables may indicate inadequate sample size. Laboratory urine test was not done for some participants.

8. CONCLUSION

Knowledge on danger signs of obstetrics among pregnant women was low and it was only 37.5%. The most frequently mentioned obstetric danger sign during pregnancy, delivery, and postpartum period was vaginal bleeding. In adjusted model, educational level, residence, time taken to reach health facility, primi gravid and participation on pregnancy conference were significantly associated with Knowledge on danger signs of obstetrics.

9. RECOMMENDATION

Woreda educational office in collaboration with other concerned stakeholders' need to empower women through education, by which education facilities and services need to be accessible for every woman in a community.

The district health office and Zonal health should review and improve the quality of pregnancy conference.

Interventions targeting improvement of maternal health should consider the quality of pregnancy conference including the quality of information offered to pregnant women and the community at large, especially on obstetric danger signs.

Awareness of key danger signs needs to be given priority by all health workers as it prepares women and their families for timely and appropriate decisions to take measures.

To improve the knowledge of mothers towards obstetrics danger signs, community mobilization and health education should be considered with policy makers at woreda level.

Health care workers should have insured and encourage women to have pregnancy's conference and design rewarding mechanisms like certificate for women who got more pregnancy's conference during their gestation period.

For health professionals

Health service providers should facilitate ways to provide health education regarding obstetric danger signs. especially during ANC visit and pregnancy conference

Health professionals have to provide materials like pamphlets and posters that help women, families and communities increase their awareness and knowledge concerning obstetric danger signs.

Health Extension workers should give health education about obstetrics danger signs for the community, ,family and for pregnant women especially for primigravida mothers.

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11. ANNEXES

11.1. Questionnaire English Version

Annex I – Information sheet

Here, I the undersigned, at Debre Berhan University College of Health Science, Department of public health, currently I will be undertaking research on a topic entitled assessment of knowledge and associated factors of Obstetric Danger Signs among pregnant mothers in Angolela Tera district, North Shoa zone, Amhara region, Ethiopia. For this study, you will be selected as a participant and before getting your assent or permission of your participation, you need to know all necessary information related to the study. Thus, this information will be detailed as;

Objective: To assess knowledge and associated factors about obstetric danger signs among pregnant Mothers in Angolela Tera district, North Shoa zone, Amhara region, Ethiopia.

Significance of the study: The research finding can be an input for concerned policy makers in decision making process around Obstetric Danger Signs. And also it serves as an input in the health education program by different organizations so as to keep the community being aware of the consequence of obstetric Danger signs.

Participants to be included: All pregnant mothers who are in the community and mothers who are voluntary to participate in the study be included.

Confidentiality: All information you give will be kept confidential and won't be accessible to any third party. Your name won't be registered on the question sheet so that you will not be identified.

Risks and Benefits of the study

Risks: The study will be carried out by interviewer administered questionnaire. The procedure doesn't bear any physical or psychological trauma. Furthermore, you will not be forced to respond to the information you do not know.

Benefits: For your participation in the study no payment will be granted or has no any special privilege to you. But, participating in the study and giving your information to questions asked will have great input in efforts to improve pregnant and delivered mother's reproductive health.

Concent: Your participation in the study will be totally based on your willingness. You have the right not to participate from the beginning, or stop any time after starting participation. You will

not be forced to respond to the question you do not know and you can ask any question whenever you like.

Name of principal investigator (38): Gorems Lemma Date: _____
Signature _____

Address of PI: Mobile: +251912122920

Email.adress: lemmagorems@gmail.com

Data Collector Name _____ Date _____ Signature _____

Supervisor Name _____ Date _____ Signature _____

Annex – II consent form

My name is ----- (Interviewer) I temporarily represent Debre Berhan University, college of health science, Department of public health. This is a study to be conducted with the objective of assessing knowledge and associated factors with respect to obstetric danger signs during pregnancy, child birth and post partum period among pregnant mothers in Angolela Tera district. As the study is directly related to women who are living in Angolela Tera woreda, you are one of the women who have been selected to participate in this study. Therefore, you are kindly requested to participate in this study and provide the information required from you. I would like to ask you a few questions if I may, but you can refuse to answer any question I ask. You may end the interview at any time. You can also refuse to participate in the study entirely. The interview will last approximately 30 minutes. Your responses will be kept confidential and there will be no way of linking your individual responses to the final results of the study findings. We would like to inform you that the responses that you provide to the questions are very essential, not only, for the successful accomplishment of the study, but also for producing relevant information which will be helpful in the planning and implementation of intervention activities to prevent delays and improve maternal and neonatal survival.

Are you voluntary to respond to the questions?

Yes; proceed with the interview

No; thank her and End.

Name of interviewer who sought the consent: _____ Date _____

Signature: _____

Name of supervisor: _____

Result: Questionnaire completed _____

Questionnaire partially completed _____

Participant refused _____

Checked by Supervisor: Name _____

Supervisor's Signature _____ Date _____

Annex –III: English version questionnaires for interview

Identification information

001 code No. _____

Code No. _____ **002. Woreda** _____ **Kebele** _____ **House no.** _____

SECTION 1: SOCIO-DEMOGRAPHIC AND ECONOMIC FACTORS			
101	Age in completed years:	----- years	
102	Marital status: -	1. Single 2. Married 3. widowed 4. Divorce	
103	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Other (Specify)...	
104	Educational status	1. Illiterate 2. Read & write 3. Elementary 4. Secondary 5. Diploma & above	

105	Occupation	1. Housewife 2. Government employee 3. Private employee 4. Merchant 5. Other (Specify)	
106	Husband Educational status:	1. Illiterate 2. Read & write 3. Elementary 4. Secondary 5. Diploma & above	
107	Monthly income in Eth. Birr: -	-----	
108	Husband occupation:	1. Farmer 2. Government employee 4.Private employee 4. Merchant 5. Other (specify)_____	
109	Residence	1. rural 2. urban	
110	Time taken from health facility in minutes.	-----	

SECTION 2:OBSTETRICS HISTORY RELATED FACTORS

201	Have you been a pregnant other than a current pregnancy?	1.yes 2.no	→If the answer is no skip to Q208
202	How many times?	_____	
203	How many times in total you gave birth?	-----	
204	Place of delivery during last recent child birth	1. Home by TBA 2. Home by HEW 3. Home by family 4.Health institution by HW 5. Other....	

205	How many of your pregnancies resulted in a baby that was born Alive?	-----	
206	How many of your pregnancies resulted in a baby that was born dead?	-----	
207	Did you receive antenatal care during your last pregnancy? (For multi gravid and delivered mothers only.	1. Yes 2. No	
208	Do you have ANC follow up during current pregnancy?	1. Yes 2. No	→ If the answer is no skip to Q211
209	If your answer is Yes, How many times do you have ANC follow up?	-----	
210	Does your husband come to Health center during your ANC follow up?	1. Yes 2. No	
211	Have you ever participated on Pregnancy's conference?	1. Yes 2. No	→ If the answer is no skip to Q301
212	If yes, How many times?	-----	
213	Does your husband participate during pregnancy conference?	1. Yes 2. No	

SECTION 3: SOURCE OF INFORMATION RELATED FACTORS ABOUT OBSTETRICS DANGER SIGN

301	Have you ever heard of “obstetric danger signs?	1. Yes 2. No	If the answer is no skip to End
302	What is your source of your information about obstetric danger signs during pregnancy?	1. Health personnel 2. Relatives 3. Friends 4. Media(TV) 5. Media(radio) 6. Other (specify)...	

SECTION 4: KNOWLEDGE ABOUT OBSTETRIC DANGER SIGNS DURING PREGNANCY, CHILD BIRTH AND POSTNATAL PERIOD

401	Can any woman develop obstetric danger signs during pregnancy?	1. Yes 2. No	
402	Name the danger signs during pregnancy that you know (circle all she mentioned).	1. Vaginal bleeding 2. Swollen hands/face, feet/ankle 3. Troubled with vision/ blurred vision 4. Severe headaches. 5. Convulsion/fit 6. No/reduced fetal movement 7. Gush (leaking) of fluid from vagina 8. Loss of consciousness 9. Sever pelvic and abdominal pain 10. Other specify....	

403	Name the danger signs during childbirth that you know (circle all mentioned)	<ol style="list-style-type: none"> 1. vaginal bleeding 2. Convulsion/fit 3. Loss of conscious 4. Labour lasing >12 hrs 5. Placenta not delivered 30 minutes after baby born 6. Baby's hand or feet comes first 7. Cord comes first of the baby 8. Other specify..... 	
-----	---	---	--

—

404	Name of danger sign during puerpurieum (the first 6weeks after birth) that you know(circle all mentioned)	<ol style="list-style-type: none"> 1. Excessive Vaginal bleeding 2. Painful and swollen calf 3. High fever or feeling hot 4. Foul smelling vaginal discharge 5. Difficulty in breathing /shortness of breath 6. Loss of consciousness 7. Convulsion/fit 8. Others (specifies).... 	
-----	--	---	--

7.2 የአማርኛ ቃለ መጠይቅ

Annex 1:

የመረጃ ቅጽ

የጥናቱ መረጃ ቅጽ

በእናቶች ላይ በእርግዝና፣ በወሊድ እና በድህረ ህይወት ላይ ለሁለት ስራዎች ስለሚሰጡ አደገኛ ምሌክቶች የእናቶችን ዕውቀትን ለመፈተሽ የተዘጋጀ መጠይቅ።

የጥናቱ ርዕስ

በአንጎላ ላይ በሥራ ወረቀት በእርግዝና፣ በወሊድ እና በድህረ ህይወት ላይ /ድህረ ህይወት/ ላይ ለሁለት ስራዎች ስለሚሰጡ አደገኛ ምሌክቶች የእናቶችን ዕውቀት፣ እና የችግር መንስዔዎች መፈተሽ።

የጥናቱ አላማ

በእርግዝና ወቅት፣ በወሊድ ላይ እና በድህረ ህይወት ላይ በሥራ ላይ የሚገኙ ለጋራ ስራዎች አደገኛ ምሌክቶች የእናቶችን ዕውቀት ለመፈተሽ ነው። የሚመለከተው የመንግስት አካል የእናቶችን ሞት ለመቀነስ አስፈላጊ ደረጃ ላይ እንዲወስድ ለማድረግ ነው።

ምስጢራዊነት

በጥናቱ ላይ ለመሳተፍ በፈቃደኝነት ላይ የተመረከቱ እና የሚሠጡት መረጃ ለጥናቱ አላማ ብቻ የሚሆን ነው።

በጥናቱ ላይ ለመሳተፍ ወይም መሳተፍ ጀምረው ማቋረጥ ከፈለጉ ማቆም ይችላሉ። እንዲሁም መመለስ የማይፈልጉትን ጥያቄዎች አለመመለስ ይችላሉ።

ነገር ግን በጥናቱ ላይ ባለመሳተፍ ወይም ማቋረጥ ወይም ጉዳት የለውም።

ይህን ጥናት በተመለከተ ጥያቄዎች ለዎት በ 092122920 ደውለው ይጠይቁ።

የተሳታፊ ፊርማ _____ ቀን _____ አመሰግናለሁ።

Annex II:

የስምምነት-ማስገንዘቢያቅጽ

የስምምነት-ማስገንዘቢያቅጽ

መለያቁጥር _____ ጤናይስጥልን! ስሜ -----
-----ነው።

እኔ-----የ----- ተማሪስሆንበእናቶችሊይበእርግዝና፣በወሊድ እና በድህረ ወሊድ ጊዜ ሊከሰቱ
ስለሚችሉ አደገኛ ምልክቶች የእናቶችን ዕውቀት እና የችግርመንስዔዎች መፈተሽ በሚደረገው
በእናቶችእናሥነ-ተዋልዶ በማህበረሰብ ጤናትምህርት የድህረ ምረቃ ተማሪ በሆኑት
በአቶጎረምስለማወልደሰማያትበሚደረገውጥናትመረጃበማሰባሰብሊይእገኛለሁ።

እርስዎ ለዚህጥናትእንድሳተፉተመርጠዎል፣ጥናቱየሚካሄደውበቃለመጠይቅሲሆንየሚሰጡኝመረጃዎችበሙሉ
ምሰጥራዊታቸውበሚገባየተጠበቀናለዚህጥናትብቻ የሚወሉ ናቸው።

የእርስዎስምበየትኛውምቦታላይእይዳፍም ።ለሚሰጡኝመረጃዎችየተለየቁጥርይሰጣቸዎል።የጥናቱወጤትቢታ
ተምምእንኳንየእርስዎእናሌሎችየጥናቱተሳታፊዎችየምትሰጡትመረጃአጠቃላይይዘቱነወየሚታተመው።

በአጠቃላይ መጠይቁ በፍቃደኝነት ሊይ የተመረከዘ

ነወ።እርሰበጥናቱለመሳተፍሆነላለመሳተፍሙሉሙበትአለዎት። በዚህ ጥናት አልሳተፍም ቢሉ ምንም ዓይነት
ችግርአይገጥሞትም።

በመጨረሻምይህንጥናትበተመለከተጥያቄካሎዎትየዚህጥናትባለቤትየሆኑትንአቶጎረምስለማወልደሰማያትበዚ
ህአድራሻ፣ በሞባይልስልክቁጥር 0912122920 መጠየቅይችላሉ።

ለዚህመረጃጥናትእንድውልመረጃለመስጠትፈቃዳኛኖት?

አዎ ----- አይደለሁም -----

በዚህጥናትሊይስምምነቱንያስሞላውሰዉስም _____ ቀን _____
ፊርማ _____ ወጤት

1. በሙሉ ተሞልቷል-----
2. መርጃሰጪዎፈቃደኛአይደለችም-----
3. መርጃወጠግማሸተሞልቷል-----

ፋ ሌላካለይግለጹ _____

ያረጋገጠው፡ ስም _____ ቀን _____ ፊርማ _____

Annex -III AMHARIC VERSION QUESTIONNAIRES FOR INTERVIEW

በአማርኛየተዘጋጀቃለመጠይቅ

001. መለያቁጥር _____

002. ቀበሌ _____

003. የቤት ቁጥር. _____

ክፍል1: ስነ-ህዝብን (ድምግራፊን) የተመለከቱ ጥያቄዎች

ተ.ቁ	ጥያቄ	ምርጫዎች	ገለጻ
101	ዕድሜ (በሙሉ-ዓመት):	-----ዓመት	
102	የጋብቻ ሁኔታ:	1ኛ) ያላገባች 2ኛ) ያገባች 3ኛ) ባልዋ የሞተባት 4ኛ) የፈታች	
103	ሀይማኖት	1ኛ) ኦርቶዶክስ 2ኛ) ሙስሊም 3ኛ) ፕሮቴስታንት 4ኛ) ካቶሊክ 5ኛ) ሌላካለይግለጹ-----	
104	የትምህርት ሁኔታ:	1ኛ) ያልተማረች 2ኛ) ማንበብናመጻፍየምትችል 3ኛ) የመጀመሪያ ደረጃ 4ኛ) ሁለተኛ ደረጃ 5ኛ) ድፕሎማናከዚያበላይ	
105	የስራ-ሁኔታ:	1ኛ) የቤት እመቤት 2ኛ) የመንግስት ሠራተኛ 3ኛ) የግል ሠራተኛ	

		4ኛ) ነጋደ 5ኛ) ሌላካለይግለጹ _____	
106	የባለቤት-የትምህርት-ሁኔታ:	1ኛ) ያልተማረ 2ኛ) ማንበብና መጻፍ የሚችል 3ኛ) የመጀመሪያ ደረጃ 4ኛ) ሁለተኛ ደረጃ 5ኛ) ድፕሎማና ከዚያ በላይ	
107	የወር ገቢ ኢትዮ...ብር	_____	
108	የባለቤት-የስራ-አይነት	1ኛ) ገበሬ 2ኛ) የመንግስት ሠራተኛ 3ኛ) የግል ሠራተኛ 4ኛ) ነጋደ 5ኛ) ሌላካለይግለጹ _____	
109	የመኖሪያ ቦታ	1ኛ) ገጠር 2ኛ) ከተማ	
110	የመኖሪያ ቦታ ከጤና ጣቢያ ምን ያህል ይርቃል?	-----በደቂቃ	

ክፍል 2: አርግዝና/ወሊድ/ድሃረወሊድ ጤና አገልግሎት መረጃዎች

201	ከዚህ በፊት አርግዝሽ ታውቁለሽ?	1ኛ) አዎ 2ኛ) የለም	→ የለም ከሆነ ወደ ጥያቄ 208
202	መልስዎ አዎ ከሆነ ስንት ጊዜ?	-----	
203	በአጠቃላይ የወለዱ አቸው ልጆች ብዛት ስንት ናቸው?	-----	
204	የመጨረሻዎን ልጁዎትን የወለዱት ቦታ? (ለወለዱ ብቻ)	1ኛ) ቤት በልምድ አዋላጅ 2ኛ) ቤት በቤተሰብ 4ኛ) ጤና ተቅዋም በጤና ባለሙያ 5ኛ) ሌላ...	
205	ከአረገዙት ወስጥ በህይወት የተወለዱት ልጆች ብዛት ስንት ናቸው?	-----	
206	ከአረገዙት ወስጥ ሞተው የተወለዱት ልጆች ብዛት?	-----	

207	በመጨረሻ እርግዝናዎ ጊዜ የቅድመ ወሊድ ክትትል አድርገዋል?(አንዴናከዚያበላይለወለዱአናቶችብቻ)	1ኛ) አዎ 2ኛ) የለም	
208	በአሁኑ እርግዝናዎ ቅድመወሊድ ክትትል አለዎት?	1ኛ)አዎ 2ኛ)የለም	→የለም ከሆነ ወደ ጥያቄ 211
209	አዎ ከሆነ ስንት ጊዜ የቅድመወሊድ ክትትል ያደረጉት?	-----	
210	የቅድመወሊድ ክትትል ጊዜ ባለቤትዎ አብሮ ጤና ተቅዋም ይመጣል?	1ኛ)አዎ 2ኛ)የለም	
211	የአናቶች ኮንፈረንስ ላይ ተሳትፈው ያወቃሉ?	1ኛ)አዎ 2ኛ)የለም	→የለም ከሆነ ወደ ጥያቄ 301
212	አዎ ከሆነ ስንት ጊዜ?	-----	
213	ነፍሰጡር ኮንፈረንስ ላይ ባለቤትዎ ተካፊሎ ያወቃል?	1ኛ) አዎ 2ኛ)የለም	

ክፍል 3: የጤና መረጃ ምንጭ መጠይቅ

301	በእርግዝና ጊዜ ሊከሰቱ ስለሚችሉ አደገኛ ምልክቶች ሰምተው ያወቃሉ?	1ኛ) አዎ 2ኛ) የለም	→የለም ከሆነ ወደ መጨረሻ ጥያቄ
302	በእርግዝና ጊዜ ሊከሰቱ የሚችሉ አደገኛ ምልክቶችን ከማን ነው የሰሙት?	1ኛ) ከጤናባለሙያ 2ኛ) ከዘመድ 3ኛ) ከጉደኞቹ 4ኛ) ከሚድያ (ቲቪ) 5ኛ) ከሚድያ(ራድዮ) 6ኛ) ሌላ (ይጥቀሱ) ---	

ክፍል 4: በእርግዝና፣ በወሊድ ወይም ከወሊድ በኋላ ሊከሰቱ ስለሚችሉ አደገኛ ምልክቶችን የተመለከቱ የዕውቀት መጠይቆች

401	በእርግዝና ጊዜ የሚከሰቱት አደገኛ ምልክቶች በሁሉም እናቶች ላይ ሊከሰቱ ይችላሉ?	1ኛ) አዎ 2ኛ) አይከሰቱም	
	በእርግዝናጊዜየሚከሰቱትንአደገኛምልክቶችየሚያወቁትንይጥቀሱልኝ።	1ኛ) በእርግዝና ወቅት በየትኛውም ጊዜየደምመፍሰስ 2ኛ) የሰውነትማበጥ 3ኛ)በትክክል የማየት ችግር(ብሻርታ) 4ኛ)ከፍተኛ ራስ ምታት	(የጠቀሱትን በሙሉ ያክብቡ)

402		5ኛ) ማንዘፍዘፍ(ማንቀጥቀጥ) 6ኛ) የጸንስ እንቅስቃሴ መቀነስ ወይም ማቆም 7ኛ) የእንሸርት ወ.ሀ መፍሰስ 8ኛ) እራስን መሳት 9ኛ) የልተሰመደ የሆድ ቁርጠት እና ማህጸን ላይ መጫን 10ኛ) ሌላ ይግልጹ-----	
403	በወሊድ ጊዜ ሊያጋጥሙ የሚችሉ አደገኛ ምልክቶች የሚያወቁትን ይጥቀሱልኝ።	1ኛ) የማህጸን ደም መፍሰስ 2ኛ) ማንዘፍዘፍ/ማንቀጥቀጥ 3ኛ) እራስን መሳት 4ኛ) ምጥ > 12 ስኦት በላይ 5ኛ) ህጻኑ ከተወለደ በኋላ የእንግደልጅ በ 30 ደቂቃ ውስጥ አለመወለድ 6ኛ) የህጻኑ እግር ወይም እጅ ቀድሞ መምጣት 7ኛ) የህጻኑ እትብት ቀድሞ መምጣት 8ኛ) ሌላ-----	(የጠቀሱትን በሙሉ ያክብቡ)
404	ከወሊድ በኋላ (እስከ 6ኛው ሳምንት ድረስ) ሊያጋጥሙ የሚችሉ አደገኛ ምልክቶች የሚያወቁትን ይጥቀሱልኝ።	1ኛ) ከፍተኛ የማህጸን ደም መፍሰስ 2ኛ) ከፍተኛ ህመም /የጭን ወይም የታፋ እብጠት 3ኛ) ከፍተኛ ትኩሳት 4ኛ) መጥፎ ሽታ ያለው የማህጸን ፈሳሽ 5ኛ) ከፍተኛ የአተነፋፈስ ችግር 6ኛ) እራስን መሳት 7ኛ) ማንዘፍዘፍ/ማንቀጥቀጥ 8ኛ) ሌላ-----	(የጠቀሱትን በሙሉ ያክብቡ)

እና መሰግናለን!!