

2020-02

Essential Newborn Care Practices and Associated factors Among Mothers who Have live Birth in Simada Woreda, South Gondar Zone, North West Ethiopia

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BAHIR DAR UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY AND BIostatISTICS

**ESSENTIAL NEWBORN CARE PRACTICES AND ASSOCIATED
FACTORS AMONG MOTHERS WHO HAVE LIVE BIRTH IN
SIMADA WOREDA, SOUTH GONDAR ZONE, NORTH WEST
ETHIOPIA**

By: TESFAYE GETNET (BSC)

**A THESIS SUBMITTED TO THE DEPARTMENT OF EPIDEMIOLOGY AND
BIostatISTICS, SCHOOL OF PUBLIC HEALTH, COLLEGE OF MEDICINE
AND HEALTH SCIENCES; IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTERS OF PUBLIC HEALTH
IN EPIDEMIOLOGY**

FEBRUARY, 2020

BAHIR- DAR, ETHIOPIA

Bahir Dar University
College of Medicine and Health Sciences
School of Public Health
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A Thesis Submitted to the Department of Epidemiology and Biostatistics, School of Public Health, College of Medicine and Health Sciences in Partial Fulfillment of the Requirements for the Degree of Masters of public health in Epidemiology.

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Declaration form

Declaration

I, the undersigned, declare that this thesis is my original work, where my work is indebted to the work of others, it has not been accepted or presented for a degree in this or any other university and that all sources of materials used for the thesis have been fully acknowledged.

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ACKNOWLEDGEMENTS

I would like to thank Bahir Dar university college of Medicine and Health Sciences department of Epidemiology and Biostatistics, for giving the chance to join in the university and their grate role as to enriching my knowledge and skill in research methodology by assigning qualified teachers during teaching learning process and advisors in my school stay that help me to conduct this thesis work.

I would like also to thank Simada woreda health office for their kindly cooperation by providing the appropriate information required for this thesis work.

I would like to express my heartfelt gratitude to my advisors **Mrs. Ergoye Melese** and **Mr. Berhanu Elfu** for their unreserved support by assisting advise in selection of appropriate literatures closely related to the topic, comment timely for any issue raised by researcher, avail any time even out of official working hours during our discussion regarding to prepare and writing this thesis work for successful completion of the thesis.

I would like to thank my study participants, data collectors and data collector's supervisors
Again.

Finally, I would like to extend my appreciation to those who had helped me a lot by giving additional advice and support.

ABSTRACT

Background: Globally, 2.5 million children died in the first month of life with (98%) of these deaths occurring in developing countries in 2018. Approximately, 7,000 neonatal deaths occurred every day and most of which close to three quarters dying on the first day. Most of the study conducted on essential newborn care practice were at health facility, which didn't represent the home delivered mothers.

Objective: To assess essential newborn care practices and associated factors among mothers who had live birth neonate in Simada woreda, South Gondar, North West Ethiopia, 2019.

Methods: A community based cross-sectional study design was conducted on September, 2019. A total of 601 mothers were selected using systematic random sampling technique for study. The sample size was calculated using prevalence of essential newborn care practice after checking using both prevalence and factors associated with newborn care practice. An interview using structured questionnaire was used to collect data. Descriptive statistics was used to describe data. Both bi-variable and multivariable binary logistic regression models was used to determine factors associated with essential newborn care practice and the strength of association was measured by odd ratios with 95% CI at p-value of < 0.05.

Result: The study revealed that the prevalence of essential newborn care practice was 54.2% (95% CI between 50%-58%). Mothers who had primary, secondary and college and above educational level were more likely to practice essential newborn care as compared to mothers unable to read and write respectively [AOR=2.62, 95% CI (1.25, 5.52), AOR=2.13, 95% CI (1.14, 3.97) and AOR=2.25, 95% CI (1.22, 4.14)]. Mothers who had ANC follow-up were more likely to practice ENBC as compared with mothers who had not ANC follow up [AOR=0.403, 95% CI (0.237, 0.686)]. Maternal knowledge on essential newborn care and newborn danger sign were statistically significant association with essential newborn care practice [AOR=3.93, 95% CI (2.09, 7.37 and AOR=2.03, 95% CI (1.25, 3.29)].

Conclusion: The study showed that the prevalence of essential newborn care practice is low even though majority of the mothers practiced individual cares.

Key words: Essential Newborn care, Practices, Simada Woreda

ACRONYMS AND ABBREVIATIONS

ANC	Antenatal Care
BSC	Bachelor of Science
CSA	Central Statistical Agency
EBF	Exclusive Breast Feeding
E.C	Ethiopian Calendar
EDHS	Ethiopian Demographic Health Survey
ENBC	Essential New Born Care
ENBCP	Essential New Born Care Practice
ETB	Ethiopian Birr
HAD	Health Development Army
HEW	Health Extension Worker
MDG	Millennium Development Goal
SDG	Sustainable Development Goal
SNNP	Southern Nations and Nationalities of People
SPSS	Statistical Package for Social Science
TBA	Traditional Birth Attendant
UN	United Nations
WHO	World Health Organization

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1. INTRODUCTION

1.1. Background of the study

Essential newborn care (ENBC) is defined as a strategic approach planned to improve the health of new-born through interventions before, during and after pregnancy, immediately after birth and during postnatal period. Preventing newborn deaths begins with the health of the mother (1).

Essential newborn care is a care given to all newborn infants at birth to optimize their chances of survival and it has standardized effective procedural steps: dry and stimulate, evaluate breathing, cord care, keep the newborn warm (prevent hypothermia), initiate breastfeeding within the first one hour of delivery, administer eye drops/eye ointment, administer vitamin k intramuscularly, place the newborn's identification bands, weigh the newborn when it is stable and warm, record all observations and treatment provided, delay bathing of the baby for 24 hours after birth. From those essential newborn care component cord care, keep the newborn warm (prevent hypothermia, initiate breastfeeding within the first one hour of delivery and delay bathing of the baby for 24 hours after birth are commonly practiced at facility and community (2).

Many countries have set under-five and maternal mortality reduction as their primary goal, as suggested by international conferences like the World Summit for Children in 1990, the United Nations Millennium Declaration and the United Nations Special Session on Children in 2002 (3). In order to preparing child-mortality-reduction strategies it is better for countries to know the magnitude of perinatal and neonatal mortality. After that which is important to assess needs and develop programmes that will reduce preventable child deaths more quickly (4). Large numbers of children die soon after birth. Many of the children die in the first four weeks of life at neonate stage, and most of them during the first week in its early neonatal stage, even if being newborn is not a disease (5).

Federal ministry of health was committed to achieve the millennium development goal (MDG) set by United Nation to improve child health over the period 1990 to 2015. Ethiopia implemented multiple high impact interventions to remove obstacles like inadequate newborn care practice to access safe childhood services at home and health facilities (6).

The causes of Neonatal deaths and stillbirths includes poor maternal health, inadequate care during pregnancy, inappropriate management of complications during pregnancy and delivery, poor hygiene during delivery, and lack of newborn care (7).

Estimates suggest that up to 75% of neonatal deaths could be prevented through cost-effective interventions. Newborn deaths may be substantially reduced through increased use of simple, low-cost interventions, such as breastfeeding, keeping newborns warm and dry, and treating severe newborn infections (8).

In 2015, 3,200,000 babies were born in Ethiopia or approximately 8,700 every day. Nearly 240 babies will die each day before reaching their first month. Ethiopia's neonatal mortality rate is 28 deaths per 1,000 live births. In Ethiopia, the main causes of neonatal deaths in 2015 were birth asphyxia (31.6%), prematurity (21.8%) and sepsis (18.5%) (9).

Essential Newborn Care (ENBC) practices recommended by WHO is include drying (wiping) and wrapping the newborn immediately after birth, initiating skin-to-skin contact, dry cord care (not applying any potentially harmful substance to the umbilical cord), immediate initiation of breastfeeding and delayed bathing (for at least 6 hours) (10).

The first 28 days of life of newborn are the most vulnerable time for a child's survival; especially the first day, week and month of life are essential time for the survival of children and therefore newborns need a careful attention during this period to increase their survival rate and to improve their health outcomes by applying essential newborn care practice guidelines properly as needed (11).

1.2. Statement of the problem

Globally, 2.5 million children died in the first month of life with 98% of these deaths occurring in developing countries in 2018. Approximately 7,000 neonatal deaths occur every day and most of which close to three quarters dying on the first day of birth because of poor essential newborn care(12).

More than half of the approximately 7.5 million infant deaths in the world occur in the first four weeks after birth, 28% in least developed countries (5).

According to the study report from Uganda, about half of the mothers put substances on the cord, and only 41% of them initiate breast feeding between the time 1 to 6 hours and early bathing is also a culture/norm(13). Other African country, for instance in Cameroon, there is still a harmful traditional practice on new-born's umbilical cord care, larger percentage 54.2% of the mothers, mal-practice had been reported, 89% of mothers applied something on the umbilical cord and breastfeeding within one hour was carried out by 44.3% mothers(14).

According to the survey report from four regions of Ethiopia, neonatal care practice is poor as only 52.1% of mothers reported that their newborns were breastfed within the first hour after delivery and 16.9% of mothers had applied butter while about 3% of them had applied other substance to the cord stump(15).

According to a study done on Mandura district revealed that essential newborn care practice were accounted 40.6% and 40.2% of mothers were used old blade, 51.9% of mothers had initiated breast feeding after one hour, 62.2% of mothers had bathed their newborn within 24 hours of birth and 22.7% of mothers had applied materials on the cord with 71.1% ash followed by butter 18.2%(16). Similar study from East Gojjam showed poor neonatal care practice which was 23.1% with the highest percentage of 65.6% of mothers bathed their newborn baby before 24 hours of birth which pose them at high risk for hypothermia, 58.4% of them started to feed their baby after one hour of life and only 41.6% of them started to feed their baby within one hour of life. According to the result, 5.4% of women applied substance on the umbilical cord stump(17).

Due to lack of appropriate care given to mothers and neonates 48% and 52% of neonatal death are contributing respectively, and almost all of those deaths could be prevented through low and effective cost interventions like integrated antenatal care, quality care at birth and at postnatal period and essential newborn care practice (18).

Despite progress over the past two decades, in 2017 alone, an estimated 6.3 million children and young adolescents died, mostly from preventable causes. Newborns account for 2.5 million of these deaths. 85% (5.4 million) of the 6.3 million deaths in 2017 occurred in the first five years of life and about half (47%) of the under-five deaths in 2017 occurred in the first month of life (19). More than 90% of neonatal deaths occur in sub-Saharan Africa 27 deaths per 1000 live

births in 2017 and about half of the deaths occur at home because of inappropriate care to newborns. Ethiopia is one of the countries with the highest neonatal death in sub-Saharan Africa. Among all under-five and infant children deaths about 62% of death occur during the first month of life (20, 21).

The 2016 EDHS results show that the neonatal, infant, and under-5 mortality rates were 29, 48, and 67 deaths per 1,000 live births, respectively. Which means, 1 in every 35 children dies within the first month, 1 in every 21 children dies before celebrating the first birthday, and 1 of every 15 children dies before reaching the fifth birthday (22). According to United Nation inter-agency group child mortality estimation in 2015, in Ethiopia, the current infant, under five, and neonatal mortality rate is 41, 59, and 28 deaths per 1000 live births respectively (23).

Some of identified determinants of neonatal mortality were number of births, place of delivery, frequency of antenatal care use, gestation age at birth, twin delivery, presence of premature rupture of membrane, complication during labor, low birth weight and neonatal care practice. In addition to these maternal age, gestational age of the first antenatal care visit and knowledge of the mothers on new-born danger signs and new-born care were factors associated with good neonatal feeding practice (24, 25).

To reduce neonatal death, Ethiopian government did many health interventions like training health professionals, enhancing referral system, integrating health services, implementing packages of Health Extension Program and routine immunization (26). The single most cost-effective intervention to reduce neonatal mortality and morbidity both in developed and developing countries is promotion of appropriate Essential newborn care practice. Despite this recommendation, there is inadequate adherence to it in middle and low-income countries (13). To improve survival of new-born essential new born care practice is a priority intervention method. These interventions are newborn resuscitation, early identifying and managing neonatal infections, identifying barriers to exclusive breast feeding, applying skin to skin contact, appropriate umbilical cord care and improving quality of health care during delivery (27).

In Ethiopia, according to EDHS 2016 report, only 26% of births takes place at birth and 73% of births were at home. In Simada Woreda also only 46.9% of births takes place at institution and the rest 53% of births were at home (22, 28). Due to this home delivery traditional Birth

Attendants (TBAs), relatives, neighbors and other aged women from the community support mothers who give birth at home is inevitable. This may lead maternal and newborn morbidity and mortality, because of lack of the standardized safe delivery and newborn care practices. Traditional practice like pre-lacteal feeding, avoiding of first milk (colostrum), swallowing of butter and application of material like animal dung and other substances on the newborn cord stump was practiced by the community in the study area. There are also numerous unscientific and unhygienic health practices and social taboos in neonatal care that makes the newborn extremely vulnerable. There are also variables included in the study whether or not affects essential newborn care practice, in which not studied by other study and most of the studies conducted regarding to essential newborn care were conducted institution based.

In South Gondar zone Amhara regional state and in Simada Woreda there is no clear information and no study done on newborn care practice and it is difficult to assess the gaps what it was and what it is. To the best of the researcher knowledge, little is known about ENBC practice and factors affecting it in the study area. Therefore, the main aim of this study will be to assess newborn care practice both at home and health facility delivery mothers in the community.

1.3. Significance of the study

The finding from the study will be one of the main initial information required for designing intervention strategy that can improve newborn health outcomes and avoiding the preventable causes of neonatal morbidity and mortality.

The finding from this study will be helped for health care planners as a base line to provide important information about the associated factors that we neglect good essential newborn care practice. This initial information will be important to design new programs and to strengthen the existed ones in order to improve the quality and effective intervention programs on neonatal care practice in simada woreda, South Gondar zone.

Additionally, the study will be provided information for persons who are working on child health in order to give attention for neonatal care practice at community and health facility. This evidence-based practice also gave directions for child health practitioners in order to develop effective education program and awareness creation strategy for mothers who give live birth on essential newborn care practices.

2. LITERATURE REVIEW

2.1. Mortality magnitude

In 2017, children and young adolescent faced the highest risk of dying in the first month of life with an average of 18 deaths per 1,000 live births globally. Globally, the neonatal mortality rate was declined by 49% from 37 deaths per 1,000 live births in 1990 to 18 in 2017, but that decline was slower than the decline in mortality among children aged 1–59 months. In 2017, 2.5 million children died in their neonatal life which accounts 46% of all under-five deaths, increasing from 41% in 2000 (19). According to EDHS report childhood mortality has declined substantially since 2000, but the change in neonatal mortality is not as significant as like that of post-neonatal and child mortality. Among regions also occur large variations in childhood mortality (29).

2.2. Prevalence of essential newborn care practice

A community based cross sectional study on Lawra District of Ghana shows the prevalence of newborn care practice were 15.8% (30). A community based study on East Gojjam Awabel district also shows the prevalence of newborn care practice were 23.1% (17). Another study on Damot pulasa woreda shows the prevalence of newborn care were 24% (31). A study done on Madura district also shows prevalence of newborn care were 40.6% (16).

Institutional based study on Aksum town facilities revealed that prevalence of essential newborn care practice were 26.7% (32). Another study done on Dessie referral hospital shows prevalence of newborn care was 46.9%. Furthermore, it also shows among home delivery mothers 71.4% practicing newborn care poorly. However, from facility delivery mothers 47.3% received newborn care optimally. Totally 53.1% of postnatal mothers' newborn care practice was poor (33).

2.2.1. Cord care

According to WHO 2017 updated guide daily chlorhexidine application to the umbilical cord stump during the first week of life is recommended for newborns who are born at home in settings with high neonatal mortality. Clean, dry cord care is recommended for newborns born in health facilities, and at home in low neonatal mortality settings (34).

A cross-Sectional Study on rural Bangladesh shows more than half of the newborns were applied substances on the umbilical cord stump. The substances commonly used to apply on the umbilical cord were mustard oil 39.6%, antibiotic powder/antiseptics 25.4%, ash 17.7%, and boric acid powder 11.7% (35).

A study conducted on East Gojjam Awabel district revealed that new blade was the most common instrument for cord cutting in the study areas used by 97.6% of the women and 2.4 % was used non boiled blade. Regarding to cord tie 97.1% of respondents replied that the cord was not tied. 5.4% of the respondents were reported as they had experience of substance application on the umbilical stamp, the most item of substance that was to be applied on the umbilical stump was butter (80%) and Vaseline ointment (20%) (17).

A cross sectional study on Dessie referral hospital shows (46.9%) of mothers used a new blade to cut the cord after delivery. After the cord was cut 56.0% of mothers were covered with cloth and 26.3% of mothers keep dry without uncover. In addition to this 2.4% of mothers apply butter and Vaseline on the umbilical stump after the baby's' cord was cut (33). A study done on Damot pulasa woreda also shows 96.4% of mothers used boiled new blade in order to cut the newborn baby and 64% mothers applied butter on the cord after the cord was cut (31). A cross sectional survey on mandura district also shows 59.8% mothers used new boiled blade to cut newborn cord (16). Another facility based study on Aksum town shows 42.8% of mothers were practiced safe cord care (32).

2.2.2. Early initiation of breast feeding

Cross sectional study done on rural Bangladesh also shows 40% of the newborns were put to the breast within half an hour of delivery and 36.1% of the newborns were given prelacteal. The commonly prelacteal provided to the newborns were sugar water 46.2%, plain water 21.3% and honey 18.6% (35). Based on a study conducted on India in also shows 38.2% of mothers-initiated breast feeding within 1 hour of delivery. This was more common in hospital-delivered babies. Mothers who delivered at home were used prelacteal feed before breast-feeding. The most common prelacteal feeds were ghee, honey, red tea and cow's milk. 67.3% of mothers were not given to their neonates (36).

A cross sectional study on Dessie hospital shows 97.1% of mothers' initiate breastfeeding immediately after delivery. In addition to this 87.1% of mothers cleaned their breast and hands before breastfeeding their baby and 61.5% of mothers fed their baby 8–12 times per day (33). Facility base study on Aksum town also revealed 63.1% of mothers initiate breastfeeding within one hour of delivery (32). Another study on Mandura district shows 48.1% of mothers began breast feeding within first hour of birth (16).

A study conducted on Damot pulasa woreda revealed that 45.8% of mothers-initiated breastfeeding within an hour of birth and 49.8% mothers were given pre-lacteals. Among mothers who gave pre-lacteals 97.3% gave water and 2.7% gave butter. 49.6% of mothers gave first milk to their newborn and 54.9% mothers fed their breast greater than or equal to eight times (31). Another study on East Gojjam, Awabel district shows 41.6% of mothers practiced initiation of breastfeeding within one hour of delivery. Furthermore 11.2% of mothers were given additional feeding other than breast feeding with in the first three days and the additional feeding were 8.1% butter and 3.7% water (17).

Cross sectional study conducted on Addis Ababa shows 44.2%) of mothers had practiced EBF for 6 months, while 55.8% of mothers provided EBF before 6 months of age. 52.6% of mothers started to breastfeed within 1 hour of delivery. Furthermore 42.4% of mothers gave extra food for their child before six months because of they believed that EBF was not sufficient for their child. Moreover, 75.8% of mothers breastfed their child 8 or more times per day (37).

2.2.3. Keep the newborn warm (Prevent hypothermia)

A community based survey on rural Bangladesh shows 90% of the newborns were dried and 92.7% of them were wrapped immediately after birth (35).

Facility based study on Dessie referral hospital shows 68.4% of mothers placed their baby on the abdomen before the placenta was delivered. In addition to this 80.8% of mothers wrapped the baby with a new cloth immediately to keep their baby warm (33). Another community-based study on Damot pulasa woreda shows 80.4% of mothers dried/wrapped the newborn baby after delivery. From those 52.2% of mothers dried/wrapped the newborn before delivery of the placenta. Pre-prepared towel for drying/wrapping of the newborn was used by 45.6% mothers. 55.3% of mothers made skin to skin contact of newborns with their body (31).

Cross sectional survey on Mandura district shows 74.4% of mothers reported that their babies were delivered on their abdomen after birth. Additionally 57.5% of mothers were practiced drying and wrapping the baby before delivery of the placenta (16). A study on Mekelle city also shows 66.9% of participants kept their newborn baby warm by wrapping them with a dry cloth and covering the whole body (38).

2.2.4. Delayed bathing (Time to first bathing)

According to WHO recommendation bathing should be delayed to after 24 hours of birth. If this is not possible at all due to cultural reasons, bathing should be delayed for at least 6 hours (34). A study conducted on India revealed that early bathing in cold water within 6 hours of birth was a common practice. The purpose of bathing was being given to remove the vernix by massaging the newborn, and after bathing, the baby was wrapped in a thin cotton cloth. The practice was no difference in home and hospital delivered babies mothers (36).

Based on a study conducted on Bangladesh shows 71.2% of mothers were practiced bath to their newborn within 3 days following delivery (35). A cross sectional survey conducted on Mandura district revealed that 37.8% of newborns were bathed after 24 hours of delivery respectively (16).

A community-based study on rural East Gojjam, Awabel district shows 34.4% of mothers were bathed their newborn after 24 hours of birth. The remaining 65.6% of mothers were bathed their newborn baby before 24 hours of birth of which 41.6% of mothers were used to bath immediately after birth. Among mothers who bathed their newborn 55.7% of mothers was used cold water and 44.3% of mothers was used warm water to wash the new born for the first time after birth(17). Cross sectional survey on Mekelle city and Damot pulasa woreda shows 78.5% and 65.3% of mothers were bathed their newborn after 24 hours of birth (38). Another study on Dessie referral hospital shows 75.8% of mothers were bathing their baby after 1 day of their delivery (33).

2.3. Factors of new born care practice

2.3.1. Socio-demographic factors

A study conducted in Bangladesh shows there was significant association between women's age and women's education with giving prelacteal (35).

According to a study done on Lawura District of Ghana shows mothers who attained at least Senior high secondary school were 20.5 times more likely to provide optimal thermal care compared to women had no formal education at all. It also revealed that compared to primiparous women, multiparous women were 2.7 times more likely to provide optimal thermal care while secondiparous were 2 times more likely to provide overall adequate new born care. Mothers whose age 20–34 years were 3.3 times, 2.0 times and 7.3 times more likely to provide optimal thermal care, good neonatal feeding and overall adequate new born care practices respectively as compared to mothers under 20 years' (30).

Totally economic empowerment is a power itself to solve many problems especially related with maternal and neonatal health care. According to a study in Dessie hospital women earn 651–1400 Ethiopian birr monthly were 57.2% less likely to practice newborn care than women who earn more than 1400 (33). A community based survey on Mekelle city also shows maternal education and marital status were statistical significance association with newborn care practice (38).

Community based study on Mandura shows that place of residence were significantly associated with newborn care (16). Place of residence also had significant association based on a study done Damot pulasa Woreda, Southern, Ethiopia (31). According to the study done on East Gojjam zone, Awabel district shows educational status and presence of radio in the household were significantly associated with newborn care practice (17).

2.3.2. Health service utilization and knowledge factors

A study done on Chenchu District, Southern Ethiopia shows antenatal care, and attending pregnant mothers meeting were significantly associated with newborn care practice. Mothers who had sought antenatal care were 3.13 times and who had attending pregnant mothers meeting

were 2.90 times more likely to practice good essential newborn care. Mothers who had good knowledge about ENC were 7.36 times more likely to practice ENC (39).

A community based study conducted on Mandura district; Northwest Ethiopia shows significant association between maternal places of delivery, ANC visit and knowledge of newborn care with newborn care practice (16). According to the study done on East Gojjam zone, Awabel district shows, advice about ENBC practices during monthly pregnant mother's group meeting were significantly associated with newborn care practice (17).

A study done on Southern Ethiopia, Damot pulasa woreda revealed that there was statistical significance association between ANC visit, advice about essential newborn care practice during monthly pregnant mother's group meeting, and knowledge about newborn danger signs with essential newborn care practice (31). A community based survey on Mekelle city also shows information on newborn care during ANC visit, knowledge on newborn care and knowledge on newborn danger sign were statistical significance association with newborn care practice (38).

A cross sectional survey on Dessie referral hospital shows mode of delivery and number of ANC follow-up were statistically significant association with newborn care practice. Mothers who had antenatal follow up once were less likely practice newborn care than mothers who had visited four and more antenatal care Mothers who delivered spontaneously vaginally were less likely practicing newborn care than instrumental delivery (33).

3. CONCEPTUAL FRAME WORK

The conceptual frame work for assessing newborn care practice and its associated factors in a schematic figure is presented as follows.

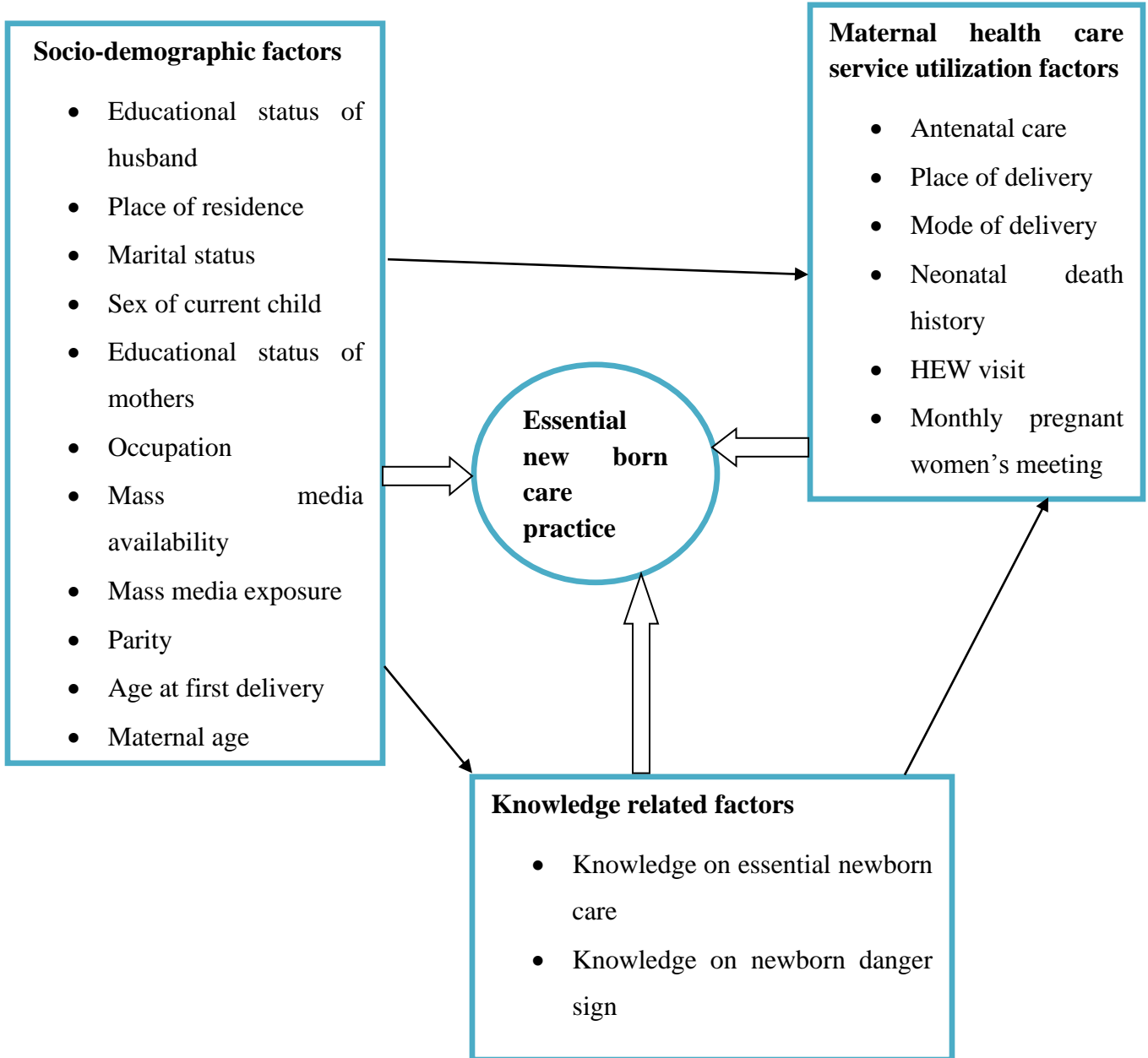


Figure 1: Conceptual framework developing from different literatures.

4. OBJECTIVES

4.1. General objective

To assess essential newborn care practices and associated factors among mothers who had live birth neonate in Simada woreda, South Gondar, North West Ethiopia, 2019.

4.2. Specific Objectives

- To determine the prevalence of essential newborn care practice among mothers who had live birth neonate in Simada Woreda, South Gondar, North West Ethiopia
- To identify associated factors of essential newborn care practice among mothers who had live birth neonate in Simada Woreda, South Gondar, North West Ethiopia

5. METHODS

5.1. Study design

Community based cross-sectional study design was used to assess essential newborn care practice and associated factors among mothers who had live birth neonate in Simada Woreda, South Gondar, North West Ethiopia, 2019.

5.2. Study area and period

The study was conducted in Simada Woreda from September 1, 2019 to September 30, 2019. Simada woreda is one of the 18th Woreda in South Gondar zone Amhara region, Ethiopia. Wogeda is the capital city of the woreda and which is 105 kilometers far from DebreTabor, 209 kilometers far from Bahirdar, 770 kilometers far from Addis Ababa and 154 kilometers east of Lake Tana.

Based on 2019 population projection given from Simada Woreda health office, the current population size of Simada woreda is 180,541 (Male 88,004, Female 92,537) of whom 5615 are under one year. From those of estimated population urban residences are 17,935 and rural residences are 162, 606 and a total of 41, 974 households are found in the Woreda. For administrative purpose the Woreda is divided into 28 Kebles in which 02 of them are only urban and the remaining 26 are rural Kebles.

The Woreda has 01 primary hospitals, 07 health centers and 28 health posts and each of health facility giving health care service to the population of the woreda and nearby populations. The woreda institutional maternal delivery service coverage was 46.92 % (28).

5.3. Source Population

The source populations were all reproductive age women (15-49) who had live birth within one year in Simada Woreda.

5.4. Study Population

The study populations were all reproductive age women (15-49) who had live birth within one year, and randomly selected in Simada woreda.

5.4.1. Sampling unit

All list of reproductive women (15-49) who had live birth within one year in selected kebeles.

5.4.2. Study unit

All reproductive women (15-49) who had live birth within one year and actually data was collected.

5.5. Eligibility criteria (Inclusion and Exclusion criteria)

5.5.1. Inclusion Criteria

- Mothers who had live birth within one year in Simada woreda
- Those who were willing to participate in the study

5.5.2. Exclusion Criteria

- Mothers who were severely sick and unable to give information
- Infants with care givers/guardians were excluding from the study
- Those were out migrating in the kebele

5.6. Sample Size determination

The sample size determination was based on a study done on essential newborn care practice and associated factors among mothers in rural community of East Gojjam, Awabel district, published 2015 (23.1%)(17). Single population formula was used to calculate sample size for first objective using the following assumptions: proportion of essential newborn care practice in previous study were 23.1%, 95% confidence level (CI) ($Z_{\alpha/2} = 1.96$), and 5% margin of error.

$$n = \frac{\left(\frac{Z_{\alpha}}{2}\right)^2 p(1-p)}{d^2} \quad \text{Where}$$

Z = Standard normal distribution at 95% confidence level of (1.96)

d = margin of error (5%)

P= Proportion of mothers with good essential newborn care practice in the community (23.1%).

$$n = \frac{\left(\frac{Z_{\alpha}}{2}\right)^2 p(1-p)}{d^2} = \frac{(1.96)^2 \times (0.231)(0.769)}{(0.05)^2} = 273$$

Then by considering 10% non-response rate and 2.0 design effect were given 601 participants. Two population proportion formula was used to calculate for the second objective using factors which had significant association with ENBC practice from similar study in Awabel district. Finally, the sample size calculation was used EpiInfo software version 7.1.5.2 package. The study was assumed to obtain maximum sample size at 5% margin of error, ratio of 1:1, 80% power and 95% certainty (CI) ($Z_{\alpha/2} = 1.96$), and 2.0 design effect since we used multistage sampling and the none respondent rate of 10%. The sample size was calculated based on factors which association had based on a study on Awabel District listed here /(17).

Table 1: Sample size calculation using associated factors on previous related study.

Variables	Proportion		COR	AOR	Sample size calculated	Design effect	Non response rate (%)	The required final sample size
	Exposed group	Non-exposed group						
Educational status	48.96	17.72	4.57	7.02	53	2.0	10	117
Advise about ENBC on monthly pregnant group meeting	38.36	13.33	4.04	4.78	93	2.0	10	205
PNC visit	41.67	19.7	4.04	3.22	141	2.0	10	310
Presence of radio on household	33.83	18.04	2.03	7.91	47	2.0	10	107

After calculating using two approaches, the sample size calculated for the first objective was greater than from the second objective, so sample size obtained from the first objective taken as final sample size. Therefore, the final sample size considering 10 % non-response rate and 2.0 design effect was **601** study participants.

5.7. Sampling procedure

Multi-stage sampling technique was used to select sampling units. In the woreda, there are 28 kebeles. From 28 kebeles 10 were selected by simple random sampling (SRS). Systematic random sampling was used to select study participants and the first study subject was selected randomly from the first interval ($K=N/n=1970/601=3.28$), and then taking every 3rd participants from mothers who had live birth. We were used the next house when the selected participants were absent. The sample sizes were distributed to each kebele proportional to the eligible mothers of the kebele as shown in figure 2.

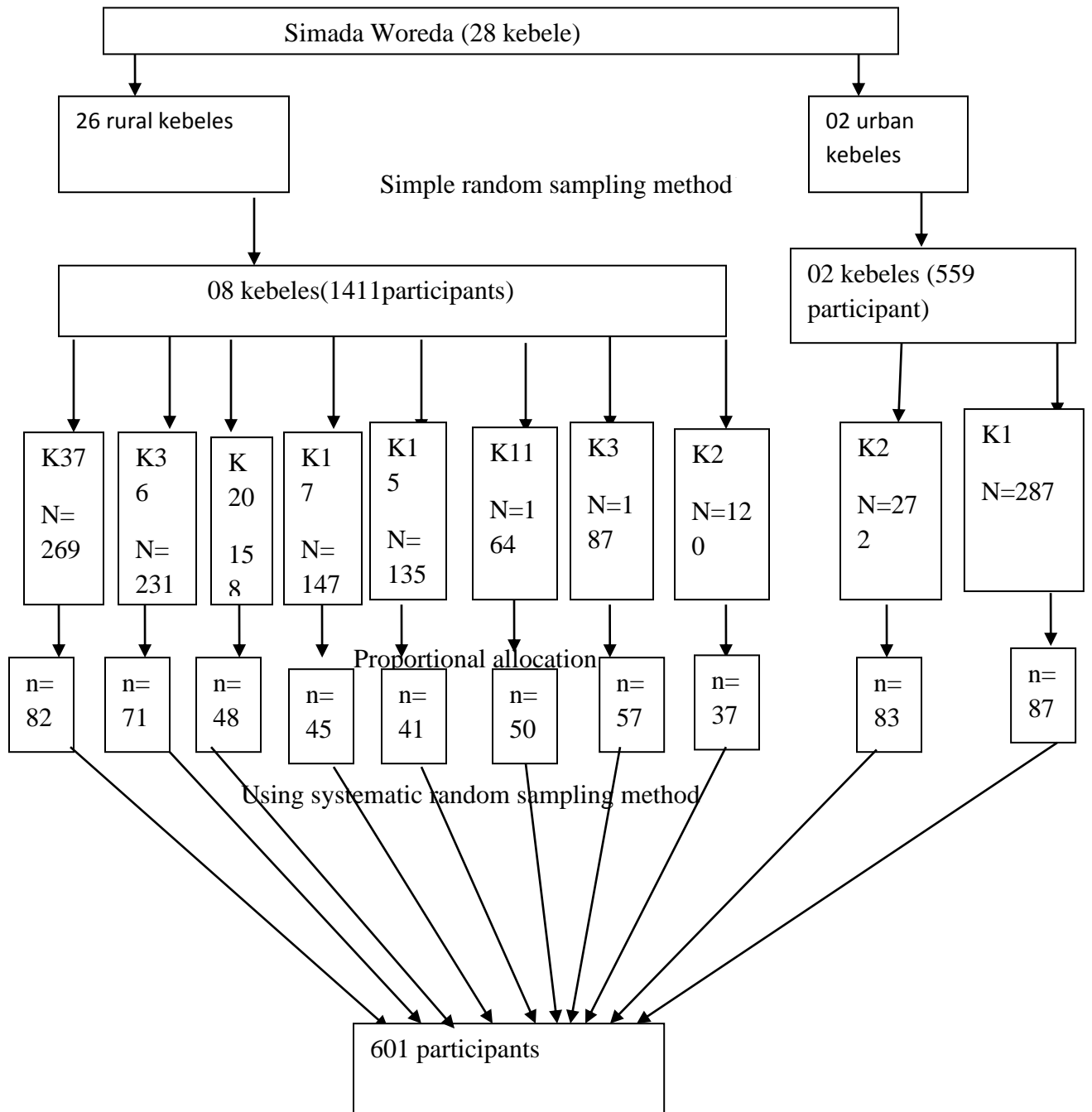


Figure 2: Schematic presentation of sampling procedure

5.8. Study variables

5.8.1. Dependent variable

Essential newborn care practices (1=good/0=poor)

5.8.2. Independent variables

Socio-demographic factors

- Maternal age in years
- Sex of current child
- Educational status of mother
- Educational status of husband
- Occupation of mother
- Place of residence
- Marital status
- Mass media exposure
- Monthly income
- parity

Knowledge related factors

- Knowledge on newborn care practice
- Knowledge on newborn danger sign

Maternal health care service utilization factors

- Antenatal care
- Place of delivery
- HEW visit during pregnancy and after delivery
- Age at first delivery
- Neonatal death history
- Health professional advise during pregnancy or delivery
- Monthly pregnant women meeting
- Mode of delivery

5.9. Operational definition and definition of terms

Essential Newborn Care -It is a care given to all newborn infants starting from delivery of the head to the first 28 days and it includes dry and stimulate, evaluate breathing, cord care, keep the newborn warm (Prevent hypothermia), initiate breastfeeding in the first one hour, administer eye ointment, administer vitamin k intramuscularly, new born immunization, weigh the newborn when it is stable and warm, delay bathing of the baby for 24 hours after birth, advice of mother on neonatal danger signs and postnatal care. Since the study included both institution and home

delivery for this study ENBC was assessed by four of newborn care (cord care, keep the newborn warm, initiate breastfeeding in the first one hour, and delay bathing of the baby for 24 hours after birth).

Safe cord care: the practice of cutting a cord with a new blade or a sterile blade and keeping the cord clean and dry without application of any foreign substances until the umbilical stump falls off.

Thermal care: Avoidance of bathing before 24 hours of delivery and well wrapping of neonates' whole body particularly the head with dry cloth.

Initiation of breastfeeding: The recommended practice of breastfeeding a newborn baby within one hour after birth.

Knowledge: Refers to knowledge response of questions about essential newborn care.

Good knowledge on newborn care practice: Those mothers who respond correctly above 50% of knowledge related questions.

Poor knowledge on newborn care practice: Those mothers who respond correctly less than or equal to 50% of knowledge related questions.

Good knowledge on neonatal danger sign: With regard to knowledge related to neonatal danger signs, those mothers who identified at least six (75%) among the eight listed danger signs. and

Poor knowledge on neonatal danger sign: those mothers who mentioned less than six of danger signs from eight listed danger sign.

Practice: Refers to performance self-report of respondents according to prepared questions regarding essential newborn care practice.

Good practice: Those mothers provided three or more above mentioned practices were categorized as good newborn care practices.

Poor practice: Those mothers provided less than three above mentioned practices were categorized as poor newborn care practices.

Antenatal care: Mothers who got health service during pregnancy at least two of the last ANC were considered has ANC follow-up.

5.10. Data collection tools and procedure

Data was collected using pre-tested structured interviewer administered questionnaire. After reviewed of relevant literatures that can address the objectives of the study, the final version of the English questionnaire was developed. Then it had translated to local language (Amharic) and back to English. Pre- test was conducted on 5% of the sample size of non-studied participants in similar sites in order to evaluate the developed questioner and then it was appropriate to collect data. The questionnaire contained variable related to socio demographic and socioeconomic characteristics, health service utilization related issue such as antenatal care, delivery and essential newborn care, mothers' knowledge on newborn care and neonatal danger signs) and other personal information's.

Four diploma midwifery data collectors and one BSC midwifery supervisor were assigned for data collection.

5.11. Data quality control

To maintain the quality of data, first, standardized data collection tools were adopted from published sources and modified accordingly in the study area context. Pretest was done on 5% of the sample size other than study sites with similar characteristics. Data collectors were persons who had experience on data collection and supervised by BSC midwifery professionals.

One-day training was given for data collectors and supervisor five days before actual data collection time on the selection procedure of study participants, purpose of the study, on the steps how they gave the necessary information for the participants when they started data collection. The data collectors were informed the study participants about how they could fill the necessary information and their contribution of participation for the study. The supervisor and principal investigator were supervised and checked the completeness and quality of data daily. After data collection, questionnaires were reviewed and checked for completeness by the supervisor and principal investigator and the necessary feedback was offered to the data collectors in the next morning. Then the data obtained from the study population were entered, cleaned and analyzed by the investigator.

5.12. Data processing and analysis

The Amharic version of data collected questionnaire were coded against the original English version. The principal investigators were entered the data using EpiInfo version 7.1.5.2 and export to SPSS version 23 software packages for data cleaning and analysis. Then, data were recorded, categorized and sorted to facilitate its analysis. Descriptive analysis was used to describe the percentages and number distributions of the respondents by socio-demographic characteristics and other relevant variables of the study. The result of descriptive statistics was presented in tables' graphs and charts.

Binary logistic regression was used to fit data in order to identify factors associated with essential newborn care practices. All independent variables listed were checked its association with dependent variable in bi-variable analysis. Then variables which were associated with the dependent variable in bi-variable analysis were included in the models of multivariable logistic regression analysis. To identify factors associated with essential new born care practice, variables with p-value < 0.2 in the bi-variable analyses were entered into multivariable logistic regression model and those with p-value <0.05 in the multivariable logistic regression model were considered as statically significant independent factors. Crude and adjusted Odds ratios were computed for each explanatory variable to determine the strength of association at 95% Confidence Interval (CI). Model adequacy was checked by Hosmer and Lemeshow test of goodness of fit and p-value greater than 0.05 was considered as a fit model.

5.13. Ethical consideration

Ethical clearance was obtained from ethical Review Board of Bahir dar University and Permission was taken from Amhara Regional Research and Technology Transfer Office, zonal health department and from district health office and selected kebele through formal letter. Before collecting the data, written consent was obtained from each study subject. Each study participants were informed about the purpose of the study and participation was voluntary without payment for their participation. Each study participants also were informed that the right to withdraw at any time during the interview. All gathered information was protected from its confidentiality. To ensure the privacy of study participants, all interviews were conducted at the private area and the data were not exposed to the third party except the principal investigator.

6. RESULTS

6.1. Socio demographic characteristics of the respondents

A total of Six hundred one (601) mothers who had under one-year children were interviewed and yielding a response rate of 100%. The age of mothers was ranged from 16 to 49 years with a mean age of 30.03 (SD of \pm 6.45) years. Majority of mothers, 553 (88.7%) were married. Concerning educational status, 263 (43.8%) of mothers cannot read and write. Among mothers, 370 (61.6%) were house wife, 405(67.4%) of them were rural dwellers and 147 (24.5%) of them gave live births for the first time (Table 2).

Table 1: Socio-demographic and economic characteristics of mothers in Simada Woreda, South Gondar zone, North West Ethiopia, 2019.

Variable	Category	Frequency	Percent
Age of mother in years	15-19	17	2.8%
	20-34	420	69.9%
	35-49	164	27.3%
Educational status of mothers	No read and write	263	43.8%
	Read and write	130	21.6%
	Primary education	47	7.8%
	Secondary education	65	10.8%
	College and above	96	16.0%
Husband education status	No read and write	196	36.8%
	Read and write	184	34.5%
	Primary education	37	6.9%
	Secondary education	32	6.0%
	College and above	84	15.8%
Maternal occupation	House wife	372	61.9%
	Merchant	70	11.6%
	Self-employee	37	6.2%
	Government employee	90	15.0%
	Student	32	5.3%
sex of current children	Male	327	54.4%
	Female	274	45.6%
Maternal marital status	Single	25	4.2%
	Married	533	88.7%
	Divorced	40	6.7%
	Widowed	3	0.5%
Maternal residence	Urban	196	32.6%

	Rural	405	67.4%
Mass media availability in house	Yes	179	29.8%
	No	422	70.2%
Mass media exposure history	Yes	370	61.6%
	No	231	38.4%
Alive number of children	1	147	24.5%
	2-4	344	57.2%
	>=5	110	18.3%
Monthly income	<=650	101	16.8%
	651-1400	243	40.4%
	>1401	257	42.8%

6.2. Health care service utilization and obstetric information of mothers

Majority of mothers, 358 (59.6%) had home visit by HEW in the last six weeks (42 days) Among visited mothers health extension workers were given health education (advise) on hand washing with soap and clean water before handling their neonate for 353 (98.6%) mothers, on keeping the neonate dry and wrap for 349 (97.49%) mothers, on breast feeding immediately after birth within one hour for 333 (93.02%) mothers and on neonatal danger sign that needs immediate care for 349 (97.49%) mothers.

Majority of mothers, 541 (90.02%) have no history of neonatal death before this deliver and only 60 (10%) were reported that they have history of neonatal death. Almost half of mothers, 327 (54.4%) were between the age of 25-29 years old when they gave first birth. The mean age at first delivery of mothers was 21.02 (SD of ± 3.73) years. Majority of mothers, 503 (83.7) have attended antenatal care (ANC) when they were pregnant of which, 500 (99.41%) had ANC visit at governmental health facilities. Two hundred seventy-eight, 278 (55.27%) of mothers were attended the first ANC visit 4 months and less than 4 months of gestational age and 225 (44.73%) mothers were attended the first ANC greater than 4 months of gestational age.

Two hundred forty-nine, 249 (49.5%) of mothers had ANC follow up 4 and above times when they were pregnant for current baby and 158 (31.4%), 73 (14.5%), 23 (4.57%) of mothers had ANC follow up 3 times, 2 times and 1 time during their current pregnancy respectively. Two hundred sixty-four, 264 (43.9%) of mothers were attended monthly pregnant mothers meeting when they were pregnant.

Majority of mothers, 509 (84.7%) were informed about care of the newborn particularly cleanliness, 473 (78.7%) were informed about breastfeeding immediately after birth within an hour, 425 (70.7%) were informed about delay bathing of newborn after 24 hours and 444 (73.9%) were informed about keeping the cord clean and avoid injuries by health professional at health institution during ANC visit and delivery. With regard to place of delivery, 386 (64.2%) of mothers were given birth at health facilities, whereas 215 (35.8%) of mothers were given birth at home. Among home delivered mothers, 159 (73.95%) were delivered due to precipitated labor (Figure 3).

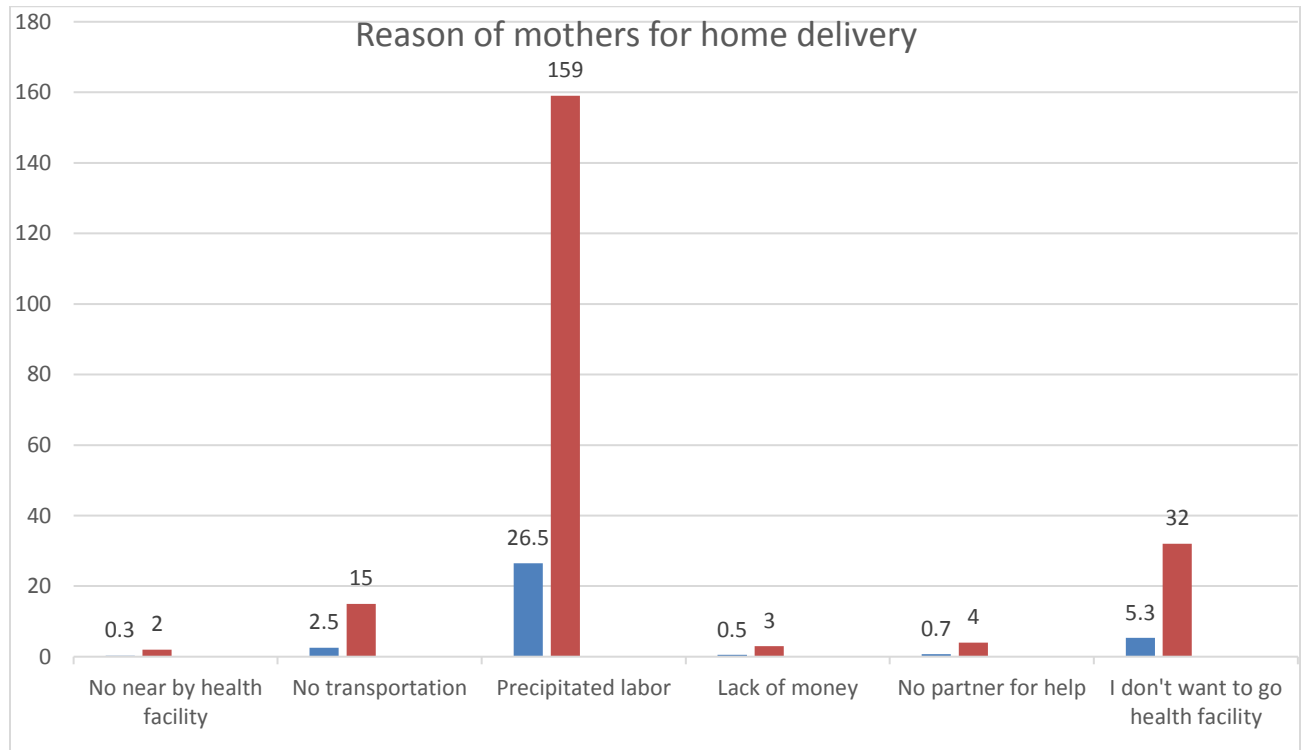


Figure 3: Bar graph of reasons of mothers for home delivery Simada Woreda, South Gondar Zone, North West Ethiopia, 2019.

Among mothers who delivered at home, 93 (43.3%) were assisted by their family members. The remaining of home delivered mothers were assisted by neighbors 70 (32.6%), Relatives 9 (4.2%) and traditional birth attendants 43 (20%).

Among mothers who delivered at health institution 207 (53.6%) were delivered by spontaneous vaginal delivery, 71 (18.4%) were delivered by episiotomy, 79 (20.5%) were instrumental delivery and 29 (7.5%) were cesarean section delivery. Among study mothers 354 (58.9%) of

mothers were vaccinated their newborn immediately after birth. Regarding to Post-natal care, 240 (39.9%) of mothers were return for post-natal care. Among mothers who didn't return for post-natal care, 208 (57.6%) of mothers were not return due to the newborn didn't sick (Table 3).

Table 3: Obstetrics factors and health service utilization of mothers during pregnancy and postpartum period, Simada Woreda, South Gondar Zone, North West Ethiopia, 2019.

Variables	Category	Frequency	Percent
History of neonatal loss	Yes	60	10.0
	No	541	90.0
Attending monthly mothers meeting	Yes	264	43.9
	No	337	56.1
Age of first delivery	15-19	200	33.3
	20-35	401	66.7
ANC follow up	Yes	503	83.7
	No	98	16.3
Number of ANC follow up	1 time	23	4.6
	2 times	73	14.5
	3 times	158	31.4
	>=4 times	249	49.5
Place of ANC visit for current child	Government Institution	500	99.4
	Private Institution	3	0.6
Gestational age of first visit	<=4 month	278	55.27
	>4 month	225	44.73
Delivery place of current children	Home	215	35.8
	Health Facility	386	64.2
Immunization history of newborn	Yes	354	58.9
	No	247	41.1
Postnatal checkup history	Yes	240	39.9
	No	361	60.1
If PNC yes at which day return	6-24 hours	1	0.4
	1-2 days	6	2.5
	3-7 days	70	29.2
	8-42 days	163	67.9
Reasons for didn't return for PNC	I had forgotten	39	10.8
	The newborn didn't sick	208	57.6
	Nothing to give for newborn	64	17.7
	I don't know	50	13.9

6.3. Practice of initiation of breast feeding

About 528 (87.9%) of mothers had breast feed their children exclusively. About 423 (70.4%) of mothers were gave the first breast milk (colostrum) for their baby and, 383 (63.7%) were initiated breast milk within an hour after birth. Among mothers who didn't give the first breast milk (colostrum) for their baby, 125 (70.2%) were due to feeling of causes illness to newborn and 53 (29.8%) were due to feeling of no importance to newborn. About 73 (12.1%) of the mothers were given additional feeding(prelacteal) other than breast feeding before six months to their newborn, from those 34 (46.6%) of mothers were given cow milk followed by butter 32 (43.8%) (Table 4).

Table 4: Practice of mothers on timely initiation of breast feeding Simada Woreda, South Gondar Zone, North West Ethiopia, 2019.

Variables	Category	Frequency	Percent
Exclusive breast-feeding history	Yes	528	87.9
	No	73	12.1
Give colostrum for baby	Yes	423	70.4
	No	178	29.6
Giving the first breast milk within 1 hour	Yes	383	63.7
	No	218	36.3
Reasons didn't give colostrum	Causes illness to newborn	125	70.2
	No importance to newborn	53	29.8
Number of breast feed per day	8-12 times/day	169	28.1
	On demand	432	71.9
More important for baby in the first 6 months	Breast milk	567	94.3
	Additional foods	34	5.7
Giving prelacteal for your current baby up to six months	Yes	73	12.1
	No	528	87.9
What prelacteal you give	Water	5	6.8
	Butter	32	43.8
	Cow milk	34	46.6
	Infant formula	2	2.7
Bottle feeding for your baby	Yes	85	14.1
	No	516	85.9

Why did you use bottle feeding	My breast has no enough milk	53	62.4
	I am too busy due to employee and with homework	32	37.6

6.4. Practice of safe cord care

Among mothers who were delivered at home, 200 (93%) had used new blade (none used) while 15 (7%) of mothers had used old or a non-boiled blade. About 492 (81.9%) of mothers were uncover, kept dry and clean the umbilical stump to keep the cord safe and clean. About 109 (18.1%) of mothers were not uncover, kept dry and clean the cord, of which 94 (86.2%) of mothers were cover with cloth. About 305 (50.7%) of mothers had applied anything on the cord, among these 19 (6.2%), 153 (50.2%), 132 (43.3%) and 1 (0.2%) of mothers had applied cow dung, butter, Vaseline and ointment/oil respectively. Most of the mothers 565 (94%) have reported to go health center if the cord bleeds or have unpleasant discharge and 20 (3.3%) of mothers had to give home medication, while 16 (2.7%) of mothers reported as they have to wait until it heals by itself.

6.5. Practice of thermal care

Thermal care is very important to prevent the risk of hypothermia from newborn babies as they are immature for thermoregulation. Regard to thermal care the result shows, 339 (56.4%) of newborn were placed skin to skin contact with their mother, 426 (70.9%) of newborns were wrapped by cloth immediately after delivery. Four hundred ten 410 (68.2%) mothers were bathed their newborn after 24 hours of delivery whereas, 191 (31.8%) of mothers had bathed their newborn within 24 hours of delivery (Figure 4).



Figure 4: Bar graph of distribution of delay bathing and thermal care of mothers to neonates in Simada Woreda, South Gondar Zone, North West Ethiopia, 2019.

6.6. Knowledge of mothers on newborn care and danger signs

Out of study mothers, 564 (93.8%) mothers were ever heard about essential newborn care practice. Among study mothers, 563 (93.7%) were knew about care of mother to their newborn baby. Three hundred ninety-four (65.6%) of mothers were responded nothing should be applied to the cord immediately after cut up to 7 days except ordered medication. Three hundred eight (66.2%) of mothers were believed that umbilical cord be handled after cut without dressing.

About, 471 (78.4%) mothers were responded newborn baby were bathed/washed after 24 hours of delivery. Among study mothers, 493 (82%) were believed newborn baby were breast fed within 1 hour after delivery. Five hundred sixty-five (94%) of mothers were believed exclusive breast feed is important to newborn. About, 562 (93.5%) of mothers were believed that mothers should fed only breast milk to her newborn baby. Among study mothers, 505 (94%) were responded they knew about newborn danger sign.

From a total of study mothers, 505 (84%) of them stated that they had information about newborn danger signs. From a total of study mothers, 493 (82%) were mentioned fast breathing as danger sign of the newborn baby.

Around 409 (68.1%) mothers were mentioned low body temperature as danger sign of newborn baby. From all mothers, 483 (80.4%) of mothers have mentioned fever as danger sign of newborn baby and, 459 (76.4%) of mothers have mentioned drowsy or unconscious as danger sign of newborn baby. Around 436 (72.5%) of mothers have mentioned cord bleeding and infection as danger sign and, 484 (80.5%) of mothers have mentioned poor sucking or unable to feed as danger sign. About 471 (78.4%) of mothers have mentioned neonatal seizure as danger sign and, 406 (67.6%) of mothers have mentioned neonatal jaundice as danger sign of newborn baby. Among newborn danger sign for which there was low awareness by mothers was neonatal jaundice and high awareness by mothers was fast breathing (Figure 5).

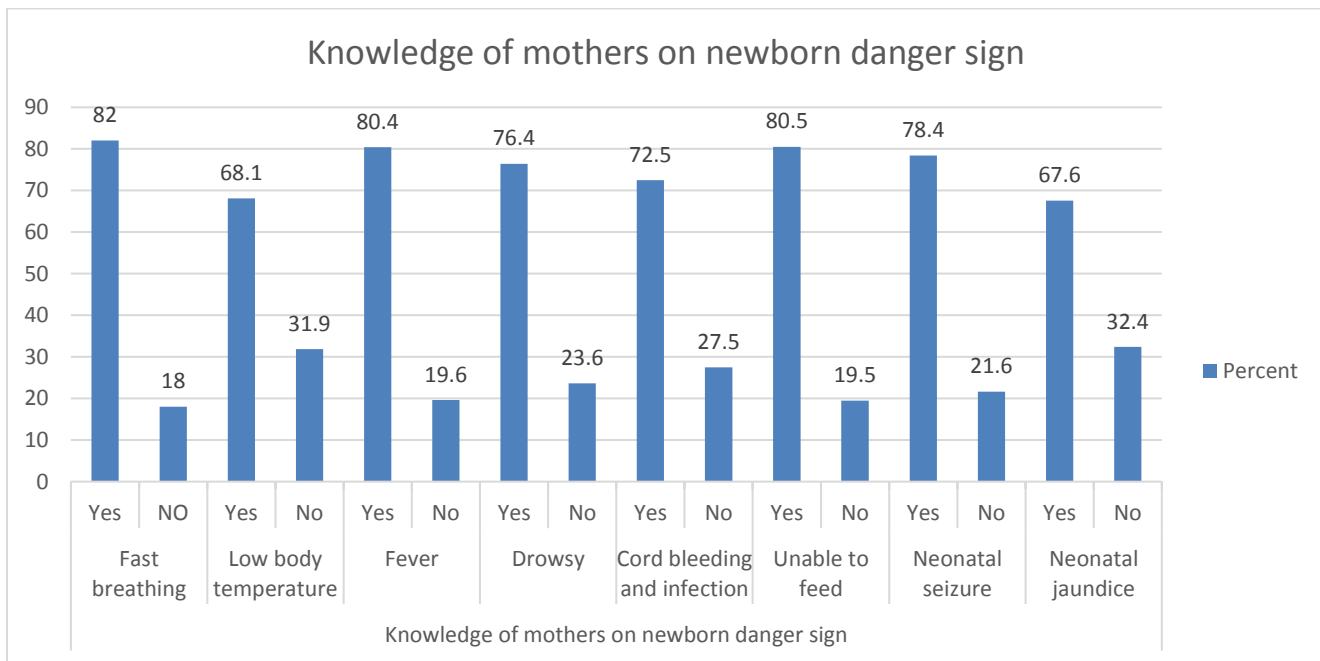


Figure 5: Bar graph of knowledge of mothers on newborn danger sign Simada Woreda, South Gondar Zone, North West Ethiopia, 2019.

There were about eight knowledge related questions used to assess knowledge status of mothers toward essential newborn care practice. Based on this 526 (87.5%) of mothers had good knowledge on essential newborn care practice and 75 (12.5%) of mothers had not knowledge on

essential newborn care practice. Regarding to newborn danger sign, 487 (81%) of mothers had good knowledge whereas, 114 (19%) of mothers had poor knowledge.

From a total of mothers, 339 (56.4%) were practiced thermal care as newborn care after delivery and 262 (43.6%) of mothers were not practiced. Almost nearly half, 296 (49.3%) of mothers were practiced safe cord care as newborn care and 305 (50.7%) of mothers were not practiced. Four hundred ten (68.2%) of mothers were practiced give bath for their newborn after 24 hours as newborn care and 191 (31.8%) of mothers were not practiced. Three hundred eighty-three (63.7%) of mothers were practiced initiation of breast-feeding within one hour after delivery as newborn care practice and 218 (36.3%) were not practiced within one hour.

Overall, 326 (54.2%) of mothers had good essential newborn care practice on above four composite variables (initiation of breast feeding, cord care, bathing of newborn and thermal care (skin to skin contact)) (95% CI between 50%-58%) and 275 (45.8%) of mothers had poor essential newborn care practice on those four composite variables (Figure 6).

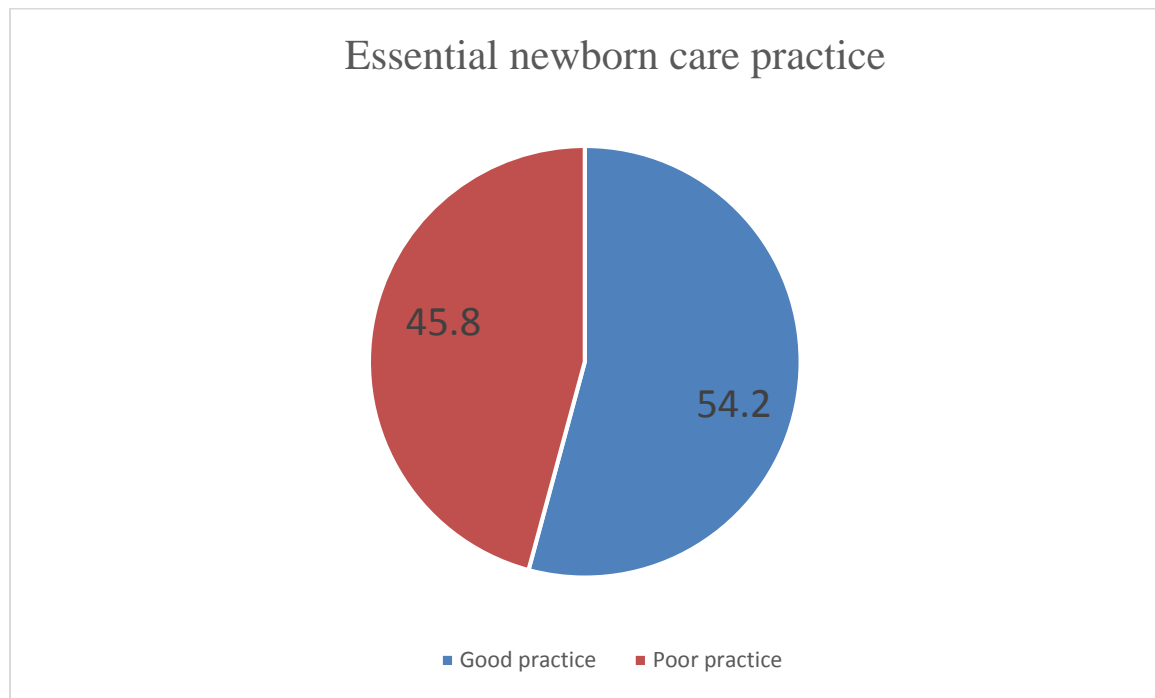


Figure 6: Pie chart of overall essential newborn care practice of mothers who had live birth in Simada Woreda, South Gondar Zone, North West Ethiopia, 2019.

Table 5: Prevalence of essential newborn care practice by different factors, Simada Woreda, South Gondar Zone, North West Ethiopia, 2019.

Variables	Category	Good ENBC practice	Poor ENBC practice
Educational status of mothers	No read and write	103 (39%)	160 (61%)
	Read and write	76 (58%)	54 (42%)
	Primary education	33 (70%)	14 (30%)
	Secondary education	41 (63%)	24 (37%)
	College and above	73 (76%)	23 (24%)
Mass media exposure history of mothers	Yes	235 (63%)	135 (37%)
	No	91 (39%)	140 (61%)
ANC follow up	Yes	298 (59%)	205 (41%)
	No	28 (29%)	70 (71%)
Maternal knowledge on ENBC	Good knowledge	311 (59%)	215 (41%)
	Poor knowledge	15 (20%)	60 (80%)
Maternal knowledge on newborn danger sign	Good knowledge	288 (59%)	199 (41%)
	Poor knowledge	38 (33%)	76 (67%)

6.7. Factors associated with essential newborn care practice

In order to identify the association of independent variables with ENBC practices both bivariable and multivariable analysis were used. Variables whose p-value less than 0.2 in bi-variable analysis were selected and were entered into the multivariable logistic regression analysis to identify predictors of essential newborn care practice.

Those variables showed association with outcome variables in the bivariable analysis like age of mother, educational status of mothers, residence, number of alive children, mass media availability, mass media exposure history, monthly income, HEW visit, age at first delivery, ANC visit, Attending monthly mothers group meeting, place of delivery, Knowledge about danger Signs of new born and Knowledge about essential newborn care practice were selected as candidate variables for multivariable logistic regression analysis. The multivariable logistic regression analysis was performed by including all the candidate variables simultaneously and

educational status of mothers, maternal mass media exposure history, ANC visit, maternal knowledge of essential newborn care and maternal knowledge of newborn danger sign had statistically significant association with ENBC practices at p-value <0.05.

Mothers who had primary education were 2.62 times more likely to practice ENBC as compared with mothers who had not read and write [AOR=2.62, 95% CI (1.25, 5.52)]. In addition to these mothers who had secondary and collage and above educational level were 2.13 and 2.25 times more likely to practice ENBC as compared with mothers who had not read and write [AOR=2.13, 95% CI (1.14, 3.97) and AOR=2.25, 95% CI (1.22, 4.14)]. Mothers who had exposed to media before were 2.03 times more likely to practice ENBC as compared with mothers who had not mass media exposure before [AOR=2.03, 95% CI (1.35, 3.07)]. Mothers who had ANC follow-up were 2.48 times more likely to practice ENBC as compared with mothers who had not ANC follow up [AOR=0.403, 95% CI (0.237, 0.686)].

Mothers who had good knowledge on essential newborn care were 3.93 times more likely to practice ENBC as compared to who had poor knowledge on essential newborn care [AOR=3.93, 95% CI (2.09, 7.37)]. Mothers who had good knowledge on newborn danger sign were 2.03 times more likely to practice ENBC practice as compared with mothers who had poor knowledge on newborn danger sign [AOR=2.03, 95% CI (1.25, 3.29)].

Table 6: Bivariable and multivariable analysis of factors associated with essential newborn care practice in Simada Woreda, South Gondar zone, North West Ethiopia, 2019.

Variables	Good ENBC practice	Poor ENBC practice	COR (95%CI)	AOR (95%CI)	P-value
Age of mother					
15-19	7 (1.2%)	10 (1.7%)	1	1	.447
20-34	245 (40.8%)	175 (29.1%)	2 (0.75, 5.36) *	2.04 (0.61, 6.86)	.247
35-49	74 (12.3%)	90 (15%)	1.18 (0.43, 3.24)	2.2 (0.6, 8.02)	.232
Educational status					
No read and write	103 (17.1%)	160 (26.6%)	1	1	.013
Read and write	76 (12.6%)	54 (9%)	2.19 (1.43, 3.35) *	1.5 (0.94, 2.4)	.09
Primary	33 (5.5%)	14 (2.3%)	3.66 (1.87, 7.17) *	2.62 (1.25, 5.5) **	.011
Secondary	41 (6.8%)	24 (4%)	2.65 (1.51, 4.65)	2.13 (1.14, 3.97) **	.017

			*		
College and above	73 (12.1%)	23 (3.8%)	4.93 (2.9, 8.38) *	2.25 (1.22, 4.14) **	.01
Occupation					
House wife	173 (28.8%)	199 (33.1%)	1	1	.227
Merchant	46 (7.7%)	24 (4%)	2.2 (1.29, 3.76) *	1.63 (0.87, 3.06)	.124
Self-employee	20 (3.3%)	17 (2.8%)	1.35 (0.69, 2.67)	2.43 (1.11, 5.33)	.026
Government employee	67 (11.1%)	23 (3.8%)	3.35 (2.01, 5.61) *	1.16 (0.29, 4.57)	.833
Student	20 (3.3%)	12 (2%)	1.92 (0.91, 4.04) *	1.6 (0.65, 3.99)	.310
Residence					
Urban	130 (21.6%)	66 (11%)	2.1 (1.47, 2.99) *	.76 (.41, 1.41)	.379
Rural	196 (32.6%)	209 (34.8%)	1	1	.379
Number of alive children					
1	94 (15.6%)	53 (8.8%)	2.99 (1.79, 4.98) *	1.36 (.72, 2.57)	.337
2-4	191 (31.8%)	153 (25.5%)	2.1 (1.35, 3.27) *	1.12 (.67, 1.87)	.667
>=5	41 (6.8%)	69 (11.5%)	1	1	.603
Media availability in house					
Yes	126 (21%)	53 (8.8%)	2.64 (1.82, 3.83) *	1.43 (0.76, 2.69)	.267
No	200 (33.3%)	222 36.9%)	1	1	.267
Mass media exposure history					
Yes	235 (39.1%)	135 (22.5%)	2.68 (1.91, 3.76) *	2.03 (1.35, 3.07) **	.001
No	91 (15.1%)	140 (23.3%)	1	1	.001
Monthly income					
<=650	48 (8%)	53 (8.8%)	1	1	.986
651-1400	112 (18.6%)	131 (21.8%)	0.94 (0.59, 1.5)	.98 (.57, 1.7)	.95
>=1401	166 (27.6%)	91 (15.1%)	2.01 (1.26, 3.21) *	.95 (.49, 1.83)	.87
HEW visit					
Yes	205 (34.1%)	153 (25.5%)	1	1	.41

No	121 (20.1%)	122 (20.3%)	0.74 (0.53, 1.03) *	1.18 (.8, 1.75)	.41
Age at 1st delivery					
15-19	90 (15%)	110 (18.3%)	1	1	.676
20-29	236 (39.3%)	165 (27.5%)	1.75(1.24, 2.46) *	.91 (0.58, 1.42)	.676
ANC visit					
Yes	298 (49.6%)	205 (34.1%)	1	1	.001
No	28 (4.7%)	70 (11.6%)	0.28 (0.17, 0.44) *	.403 (.237, .686) **	.001
Monthly pregnant women's meeting					
Yes	158 (26.3%)	106 (17.6%)	1	1	.98
No	168 (28%)	169 (28.1%)	0.67 (0.48, 0.92) *	1.01 (.67, 1.52)	.98
Knowledge on ENBC practice					
Good	311 (51.7%)	215 (35.8%)	5.79 (3.2, 10.46) *	3.93 (2.09, 7.37) **	P<.001
Poor	15 (2.5%)	60 (10%)	1	1	P<.001
Knowledge on newborn danger sign					
Good	288 (47.9%)	199 (33.1%)	2.89 (1.88, 4.45) *	2.03 (1.25, 3.29) **	.004
Poor	38 (6.3%)	76 (12.6%)	1	1	.004

NB: COR=Crude odds ratio, AOR= Adjusted odds ratio, * P<0.2 had used to screen variables in bivariable analysis for multivariable analysis, ** P<0.05 Significant Associations of Multivariable analysis with P< 0.05. The model was adequate at p-value of 0.947

7. DISCUSSION

Over all, the prevalence of essential newborn care practice of mothers was considerably low as their practice of all composite variables when compute was not satisfactory and this was contrary to the WHO recommendation. This study revealed that prevalence of essential newborn care practice was 54.2% of mothers had good ENBC practice of all composite variables such as initiation of BF, cord care, thermal care and delayed bathing, and 45.8% of mothers had poor ENBC practice on the above listed composite variables.

This result is higher than the study done in East Gojjam Awabel district (23.1%), (17), the study done in Damot pulasa woreda (24%), (31), the study done in Madura district (40.6%), (16) and study done in Lawura District of Ghana (15.8%), (30). The possible reason for this variation could be due to the expanding health services coverage and increased awareness and information and maternal health services because of health facility availability and expanding of health extension program.

This study found that 49.3% of the mother practice safe cord care, by keeping it clean and dry without applying anything, this result is lined with a study done on Aksum town (42.8%), (32) and a study done on Bangladesh almost half were practice safe cord care (35). But, it is higher than a study done in Damot pulasa woreda (36%), (31). The possible reason for the variation might be due to the expanding health services coverage and increased maternal awareness and maternal health services. This study finding is lower than study conducted in Awabel district (94.6%), (17). This may be due to study settings and multi-cultural variation among regions. In this study finding showed that about (50.7%) of mothers had applied different traditional substances on the umbilical cord stump like cow dung (6.2%), butter (50.2%), oil (0.2%) and Vaseline (43.3%). This result is lower than study conducted in Damot Pulsa Woreda (31) and higher than a study done in Awabel District (17). This difference may be due to increased awareness about harmful effect of traditional substance application to the umbilical cord stump or study settings.

The prevalence of timely initiation of breast feeding within one hour found in the study area was (63.7%). This is higher than study done in Mandura district (48.1%), (16), study done in Damot Pulasa Woreda (45.8%), (31), a study done in Awabel District (41.6%), (17), a study conducted in India (38.2%), (36) and study done in Bangladesh (40%), (35),. This higher result may be due

to awareness about the advantage of early initiation of breast feeding to ensure that the baby had received colostrum. However, this finding is lower than the study done in Dessie referral hospital (97.1%), (33). This is may be due to an awareness difference on the advantage of exclusive and early initiation of breast feeding and might be study settings and the finding was consistent with a study done in Aksum town (63.1), (32).

Ideally, newborn should not be bathed until 24 hours after delivery to maintain body temperature and to minimize risk of hypothermia. In this study, 68.2% of mothers were bathed their newborn after 24 hours of birth. This finding is higher than study done in Damot Pulusa Woreda (65.3%), (31), study done in Mandura District (37.8%), (16) and study done in Awabel District (34.4%), (17). The discrepancy is might be due to awareness about the importance of delayed bathing to prevent hypothermia and to ensure optimum thermal care practice. In the other way the finding of the study was found to be lower than the study done in Dessie referral hospital (75.8%), (33), study done in Mekelle City (78.5%), (38) and study done in Bangladesh (71.2%), (35). This difference might be due to relatively lack of proper advice before, during and after birth about the importance of delayed bathing and the study area variation. There could be also other cultural beliefs associated with newborn bathing soon after birth, because the new born body is coated with vernix and blood which is considered dirty and may be fear that if the baby's skin is not cleaned soon after delivery.

Maternal place of residence were not statistically significant association with ENBC practices, but had significant association in a study conducted Mandura District and Damot Pulusa Woreda, (16), (31). This difference might be due to study settings, health service institution accessibility for maternal utilization and the health extension program expansion effect. Maternal age, maternal marital status, income level, media availability and number of a live children were not statistically significant association with essential newborn care practice in this study. Monthly pregnant women's meeting were not statistically significant association with ENBC practice, but had significant association in a study done on Awabel District, Damot Pulusa Woreda and Chencha District, (17), (31), (39). This difference might be due to pregnant mother's meeting have been intervene at all level of the community by health extension program.

Educational status of mothers had statistically significant association with ENBC practice. Mothers who had primary, secondary and college and above educational level were 2.62, 2.13

and 2.25 times more likely to practice ENBC as compared with mothers who had not read and write. This finding is consistent with a study conducted on Mekelle City, a study conducted on Awabel District, a study conducted on Lawura District of Gahna, (38), (17), (30). The possible reason is might be due to the fact that educated mother may have better understanding about the ENBC practices. In this study mothers who had mass media exposure history were 2.03 times more likely to practice ENBC as compared with those of mothers had not mass media exposure history. This could be those mothers who had mass media exposure may listen and oriented about the essential newborn care. In this study mothers who had ANC visit were 2.48 times more likely to practice ENBC as compared to those of mothers who didn't get ANC visit, which is consistent with a study conducted in Mandura District, Damot Pulusa Woreda, Mekelle city and Chench District (16), (31), (38), (39). This might be due to women who attended ANC have the chance of getting information about the components and the importance of newborn care practice from health care providers. Therefore, the government should integrating newborn health with maternal and child health, rather than creating a vertical neonatal health programmes, with an emphasis on strengthening or creating synergies between maternal and child health services and between the health system and the community.

Mothers who had good knowledge about essential newborn care were 3.93 times more likely to practice ENBC as compared with mothers who had poor knowledge about essential newborn care. The study is consistent with a study conducted in Mandura District and Chench District, (16), (39). The possible explanation for this could be most of mothers in the study may not have adequate knowledge about essential newborn care and having knowledge about essential newborn care makes them to practice it. This study revealed that mothers who had good knowledge about newborn danger sign were 2.03 times more likely to practice ENBC as compared to mothers who had poor knowledge about newborn danger signs. This finding was supported by study done in Damot Pulusa Woreda, (31) and study done in Mekelle City, (38), which states that mothers who had good knowledge on newborn danger sign were practiced essential newborn care as compared with mothers who had poor knowledge on newborn danger sign. This could be most of mothers may not have adequate knowledge about newborn care and might be due to inadequate message about newborn care during antenatal care follow up.

8. STRENGTH AND LIMITATION OF THE STUDY

Strength

The study covers wide area of essential newborn care component which are basically practiced by mothers for both home and institution delivery mothers.

Limitation

There could be recall bias because the data were collected from those mothers who give birth within 12 months back preceding the study.

9. CONCLUSIONS

In this study, the prevalence of good essential newborn care practice is unsatisfactory, even though majority of respondents practice individual variables of care (timely initiation of breast feeding, safe cord care, thermal care and bathing of newborn after 24 hours). Educational status of mothers (primary secondary and college and above), mass media exposure history of mothers, ANC visit, knowledge of mothers on essential newborn care and knowledge of mothers on newborn danger sign were significantly associated independent variables with practice of essential newborn care.

10.RECOMMENDATION

Based on the finding of the study the following recommendations were forwarded:

- Health care providers should provide awareness creation about essential newborn care for those who did not educated.
- Health care providers should provide an ongoing health information and counseling to mothers regarding to essential newborn care practice during ANC visit for to aware mothers about harmful effect of malpractice to newborns and danger sign of newborn.
- Health care planners: Since mothers who had exposed to mass media were practiced essential newborn care, government should give awareness creation in different mass media via television or radio and media-based awareness creation should present in health institution.
- Simada Woreda Health Office: To work effectively on health extension program evaluation and monitoring to strengthen providing appropriate essential newborn care practice counseling during ANC visit. Since heard of mass media is significant in this study so that providing key behavioral messages about ENBC practices in the mass media and promotion of suitable information education communication materials in the health institution.
- Future researchers: Newborn care is relatively crucial research topic and it is governmental concern in order to decrease morbidity and mortality of newborn. So, suggestions for future researchers to work researches repeatedly including variables not included in this study.

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12.ANNEXES

Annex 1. Participant consent and information sheet

Information for Informed Consent

My name is _____ I am working with **Tesfaye Getnet**, who is doing a research for the partial fulfillment of Master's Degree in Public Health at Bahir Dar University.

This questionnaire is intended to assess Essential newborn care practices among mothers who have live birth neonate in Simada Woreda, South Gondar zone, North West Ethiopia, 2019. You are selected to be one of the Participants in the study.

Purpose of the study: The main objective of this research project is to assess Essential newborn care practices among mothers who have live birth neonate prior to the study and its associated factors in Simada Woreda, South Gondar zone, North West Ethiopia, 2019.

The other purpose is for the fulfillment of master degree in public health. The information you provide here will be very helpful to the investigator of this research project to write a research paper for the requirement in completion of master's program. The findings of this project could help in designing priority intervention regarding to essential newborn care practice and also important to improve the health of newborns.

Procedures: There are questions that assess the practices and factors affecting the practice regarding to newborn. Then, I would like to ask you to give your honest answers on the questions forwarded. If you need clarification, please ask me at any time. You have the right to skip any question that you do not want to answer. But, your correct answer to each question can make the study valuable.

Risk and Benefit: By participating in this research project, I believe that there is no risk. The study will have direct and indirect benefits. Finally, this is important to identify future interventions related to the problem to be found in the study.

Confidentiality: The information collected from this research project will be kept the confidentiality. Any of your personal identification will not be included in any part of this research format, only a code number assigned to it will never revealed to anyone except the principal investigator.

Informed consent: It has been read to me all information stated above. Therefore, I am willing to participate in this study Signature -----

Date of data collection-----

Data collector: I confirm that I have explained to the participant all relevant information about the study as indicated above. **Name:** -----Signature-----

Annex 2. Questionnaire English Version
Part I Socio-demographic and economic questions

Q/N	Question	Answer and code	Go to
101	How old are you?	-----in years	
102	What is your marital status?	<ol style="list-style-type: none"> 1. Single 2. Married 3. Divorced 4. Widowed 	If not married skip 104
103	What is your husband educational level?	<ol style="list-style-type: none"> 1. No read and write 2. Read and write 3. Primary education 4. Secondary education 5. College and above 	
104	What is your educational level?	<ol style="list-style-type: none"> 1. No read and write 2. Read and write 3. Primary education 4. Secondary education 5. College and above 	
105	What is your occupation?	<ol style="list-style-type: none"> 1. House wife 2. Merchant 3. Self-employee 4. Government employee 5. Student 6. Other 	

106	What is the sex of your current children?	1. Male 2. Female	
107	Place of residence	1. Urban 2. Rural	
108	How many children do you have (alive)?	-----	
109	Do you have mass media in your house (television, radio...)?	1. Yes 2. No	
110	Do you have heard of mass media before?	1. Yes 2. No	
111	How much is your monthly income in ETB	-----ETB	

Part II Maternal health care service utilization and obstetric factors

Q/N	Question	Answer and code	Go to
201	Did you have a home visit by health Extension worker in the last 6 weeks?	1. Yes 2. No	If no, skip to 203
202	What the HEW did advise you on care before and after delivery about the following points?		
	1. Hand washing with soap and water before handling the neonate?	1. Yes 2. No	
	2. Keeping the neonate immediately dry and	1. Yes 2. No	

	wrapping during delivery?		
	3. Breastfeeding immediately after birth within an hour?	1. Yes 2. No	
	4. Danger sign of the neonate that need immediate health care?	1. Yes 2. No	
203	Do you have history of neonatal death?	1. Yes 2. No	
204	What was your age at first delivery in years?	-----	
205	Have you been on ANC follow up when you were pregnant for your current baby?	1. Yes 2. No	If no, skip to 209
206	If yes, how many times?	-----	
207	Where did you receive ante natal visit while you were pregnant for this baby?	1. Government Institution 2. Private Institution	
208	At what gestational age was your first visit?	-----months	
209	Did you have attending monthly pregnant mother's group meeting?	1. Yes 2. No	
210	During your antenatal visit or delivery at health institution, did the health Professional informed about the following counseling topics at least once?		
	1. Breastfeeding immediately after birth within an hour?	1. Yes 2. No	
	2. Care of newborn, particularly cleanliness?	1. Yes 2. No	
	3. Delay bathing of newborn for	1. Yes	

	24 hours?	2. No	
	4. Keeping the cord clean and avoid injuries?	1. Yes 2. No	
211	Where were you delivered your current children?	1. Home 2. Health Facility	If not 1 go to 214
212	If it was home, why?	1. No nearby health facility 2. No transportation 3. Precipitated labor 4. Lack of money 5. No partner for help 6. I don't want to go health facility 7. Other specify _____	
213	If it was home, who assists the delivery?	1. Family 2. Neighbors 3. Relatives 4. TBA	
214	If, you deliver institution in which mode of delivery you delivered?	1. Spontaneous vaginal delivery 2. Assisted vaginal(episiotomy) 3. Assisted vaginal(instrumental) 4. cesarean section delivery	
215	Was your baby immunized at birth?	1. Yes 2. No	
216	Did you return back to health institution for postnatal check-up?	1. Yes 2. No	
217	If yes, at which day did you return back to health institution for Postnatal check-up?	-----in days	

218	If no, what was the reason didn't return for postnatal care?	<ol style="list-style-type: none"> 1. I had forgotten 2. The newborn didn't sick 3. Nothing to give for newborn 4. I don't know 	
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Part III Assessing the practice on initiation of breast feeding.

Q/N	Questioner	Answer and code	Go to
301	Are you currently feed breast exclusively?	<ol style="list-style-type: none"> 1. Yes 2. No 	
302	Did you give the first breast milk (Colostrum) for your baby?	<ol style="list-style-type: none"> 1. Yes 2. No 	
303	Did you give the first breast milk within one hour for your baby?	<ol style="list-style-type: none"> 1. Yes 2. No 	
Other breast-feeding related questions			
304	If you did not give colostrum for your baby, what was the reason?	<ol style="list-style-type: none"> 1. Causes illness to newborn 2. No importance to newborn 	
305	If breast feed, how often did you breastfeed your baby in a day?	<ol style="list-style-type: none"> 1. 8-12times/day 2. On demand 	
306	What type of food do you think more important for the baby in the first six months?	<ol style="list-style-type: none"> 1. Breast milk 2. Additional foods 	
307	Did you give additional food(prelacteal) for your current baby up to six months?	<ol style="list-style-type: none"> 1. Yes 2. No 	If,2 skip to 309
308	What additional food (prelacteal) did you give for your current baby after	<ol style="list-style-type: none"> 1. Water 2. Honey 	

	birth?	3. Butter 4. cow milk 5. infant formula)	
309	Did you use bottle feeding for your baby?	1. Yes 2. No	If, no skip to 401
310	If yes, why did you use bottle feeding?	1. My breast has no enough milk 2. I am too busy due to employee and with homework	

Part IV Assessing the practice of cord care

Q/N	Questionnaire	Answer and code	Go to
401	Did you used new (none used) to cut the cord after delivery?	1. Yes 2. No	
402	If no, what was used?	1. Old and unboiled blade 2. Other	
403	Did you Uncover, keep dry and clean the umbilical stump after the cord is cut?	1. Yes 2. No	
404	If no, what did you do?	1. Cover with cloth 2. Other	
405	Did not anybody apply anything on the stump after the baby's cord was cut?	1. Yes 2. No	If, yes skip to 407
406	If no, what was applied?	1. cow dung 2. butter 3. Vaseline	

		4. Ointment/oil	
407	What do you do if the baby cord bleeds or have unpleasant discharge?	1. Go to health center 2. Home medication 3. Wait until heal by itself	

Part V Assessing practice of the thermal care of the neonate

Q/N	Questionnaire	Answer and code	If go to
501	Was the baby placed in skin to skin contact in the first 24 hours of delivery?	1. Yes 2. No	
502	Did you wrap the baby in a cloth immediately after birth?	1. Yes 2. No	
503	Did you give bath for newborn baby after 24 hours of delivery?	1. Yes 2. No	

Part VI Assessing knowledge of mothers on newborn care and newborn danger signs

Q/N	Questionnaire	Answer and code	If go to
601	Have you ever heard about ENBC practice?	1. Yes 2. No	
602	Do you know about care of the mother to her newborn baby?	1. Yes 2. No	
603	Do you think that anything should not be applied to the cord immediately after cut up to 7 days except ordered medication?	1. Yes 2. No	

604	Do you think that umbilical cord should be handled without dressing after cut?	1. Yes 2. No	
605	Do you think that the newborn should be washed / bathed after 24 hours of birth the first time?	1. Yes 2. No	
606	Do you think that the newborn should be breast fed Within one hour of delivery?	1. Yes 2. No	
607	Do you think that exclusive breast feeding is important to the newborn?	1. Yes 2. No	
608	Do you think that a mother feed only breast milk to her new born baby?	1. Yes 2. No	
609	Do you know about newborn danger sign?	1. Yes 2. No	
610	If yes, could you mention all the danger sign you know? You can mention more than one answer		
	A. Fast breathing	1. Yes 2. No	
	B. Hypothermia	1. Yes 2. No	
	C. Fever	1. Yes 2. No	
	D. Drowsy or unconscious	1. Yes 2. No	
	E. Cord bleeding and infection	1. Yes 2. No	

	F. Poor sucking or unable to feed	1. Yes 2. No	
	G. Neonatal seizure	1. Yes 2. No	
	H. Neonatal jaundice	1. Yes 2. No	

Annex 3. Study Questionnaire in Amharic Version

12.1.1. አባሪ አንድ፡ የመረጃ መስጫ ቅፅ

እንደምን ዋሉ/ አደሩ! እኔ ስሜ ----- እባላለሁ፡፡ከተስፋየ ጌትነት ጋር የምሰራ ሲሆን በባህርዳር ዩኒቨርሲቲ ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና ትምህርት የኢፒዲሞሎጂ ትምህርት ክፍል የማስተርስ ተማሪዎች ለሚያጠኑት የመመረቂያ ጥናት መረጃ ሰብሳቢ ነኝ፡፡ ስለዚህ የጥናቱን መረጃዎች ለመሰብሰብ እኔና እርስዎ ለአጭር ጊዜ ማለትም ከ10-15 ደቂቃ ያክል ውይይት ይኖረናል፡፡ ለዚህም ውይይት እንዲተባበሩኝ በትህትና እጠይቃለሁ፡፡ ወደ ውይይቱ ከመግባታችን በፊት ስለ ጥናቱ ዓላማና ጠቅላላ ሁኔታ ስለማነብላት በጥሞና እንዲያዳምጡኝ በአክብሮት እጠይቃለሁ፡፡ በመጨረሻም በጥናቱ ለመሳተፍ መስማማትዎንና አለመስማማትዎን ይነግሩኛል፡፡ የዚህ ጥናት ዓላማ በወረዳችን የሚኖሩ ከአንድ ዓመት በታች ህፃን ያላቸው እናቶች አዲስ ለተወለደ ህፃን ያላቸውን የጤና አጠባበቅ/የእንክብካቤ ሁኔታ ለማወቅ ሲሆን ጥናቱ የሚካሄድበት መንገድ በሚሰበሰበው መረጃ በሚቀርብ መጠይቅ ይሆናል፡፡ በቆይታዎ ሁሉ ሚስጥር የተጠበቀ እነደሆነ እንዲሁም ስምዎትንም አንጠቅስም ማለትም አንጠይቅም፡፡ ለማነኛውም ጥያቄ የሚሰጡት ምላሽ ለሌላ ሰው ተላልፎ አይሰጥም፡፡ የጥናቱ ውጤት ሪፖርትም በስምዎት አይገለፅም፡፡ መጠይቁ በፈቃደኝነት ላይ የተመሰረተ ስለሆነ የእርስዎ መሳተፍ ወይም አለመሳተፍ እንዲሁም ጥያቄዎችን ላለመመለስ ፈቃደኛ አለመሆንና በጥያቄው ወቅት አቋርጦ መውጣት የሚችሉ ሲሆን ይህንን በማድረግዎ አሁንም ሆነ ለወደፊት እርስዎ እና ቤተሰብዎ በሚያገኙት አገልግሎት ላይ ምንም ዓይነት ተፅዕኖ አይኖርም፡፡ በጥናቱ ላይ ተሳታፊ በመሆንዎ የሚሰጥ ክፍያ አይኖርም፡፡ ለመሳተፍ ፈቃደኛ ነዎ?

1. አዎ-----

2. አይደለሁም-----

አመሰግናለሁ!

በጥናቱ ለመሳተፍ ፈቃደኛ ከሆኑ የፈቃደኝነት ማረጋገጫ ቅፅ ይፃፉ፡፡

12.1.2. አባሪ ሁለት፡- የስምምነት ውል ቅፅ:

ከታች የፈረምኩት እኔ የጥናቱ ዓላማ የተነገረኝ ሲሆን ለምጠየቀው ጥያቄ የማውቀውን መመለስ እንደምችል እኔ የምሰጠው መረጃ ለዚህ ጥናት አገልግሎት ብቻ የሚውል መሆኑን ስሜና የምሰጠው መረጃም በሚሰጥር እንደሚያዝ ተነግሮኛል፡፡ ፍላጎት ከሌለኝም በጥናቱ ያለመሳተፍ እንዲሁም ጥያቄ ያለመመለስና በጥያቄው መካከል አቋርጬ መውጣት እንደምችል የተነገረኝ ሲሆን በዚህም መሰረት በጥናቱ ለመሳተፍ ፈቃደኛ መሆኔን በፊርማዬ አረጋግጫለሁ፡፡

ጥናቱ የሚካሄድበት ቦታ/ቀበሌ/ ስም-----ኮድ ቁጥር-----ፊርማ-----ቀን-----/-----/-----

የጥናቱ ተሳታፊ ፈቃደኛ መሆናቸውን የሚያረጋግጥ የመረጃ ሰብሳቢ ስም-----

ፊርማ-----ቀን-----

የረጋገጠው ሱፐርቫይዘር ስም-----ፊርማ----- ቀን-----

መጠይቆች

ክፍል 1: ማህበራዊ፣ቤተሰባዊና ኢኮኖሚያዊ መረጃን በተመለከተ

ተ.ቁ	ጥያቄ	መልስ እና ኮድ	ምርመራ
101	እድሜዎ ስንት ነው	_____ ዕድሜ በዓመት ይሞላ::	
102	የጋብቻ ሁኔታ	<ol style="list-style-type: none"> 1. ያላገባች 2. ያገባች 3. የፈታች 4. የሞተባት 	<p>መልስዎ</p> <p>1 ካልሆነ</p> <p>104ን</p> <p>ይዘለሉ</p>
103	የትምህርት ሁኔታ?	<ol style="list-style-type: none"> 1. ማንበብ መጻፍ የማይችል 2. ማንበብና መጻፍ 3. የመጀመሪያ ደረጃ 4. ሁለተኛ ደረጃ 5. ኮሌጅ እና ከዛ በላይ 	
104	የባል የትምህርት ሁኔታ	<ol style="list-style-type: none"> 1. ማንበብ መጻፍ የማይችል 2. ማንበብና መጻፍ 3. የመጀመሪያ ደረጃ 4. ሁለተኛ ደረጃ 5. ኮሌጅ እና ከዛ በላይ 	
105	የስራ ሁኔታ?	<ol style="list-style-type: none"> 1. የቤት-አመቤት 2. ነጋዴ 3. የግል ሰራተኛ 4. የመንግስት ሰራተኛ 5. ተማሪ 6. ሌላ ከሆነ ይጻፉ:: 	
106	አሁን በቅርብ የወለዱት ልጅ ያታ?	<ol style="list-style-type: none"> 1. ወንድ 2. ሴት 	
107	የመኖሪያ ቦታ?	<ol style="list-style-type: none"> 1. ከተማ 2. ገጠር 	
108	በሂወት ያሉ ስንት ልጅ አለዎት?	-----	

109	ብዙሃን መገናኛ በቤትዎ አለዎት(ቴሌቪዥን እና ሬዲዮ?)	1. አዎ 2. የለም	
110	ብዙሃን መገናኛ ስምተው ያውቃሉ?	1. አዎ 2. የለም	
111	የወር የገቢ መጠን ስንት ነው? በኢትዮጵያ ብር	-----	

ክፍል ሁለት: ከእናቶች እርግዝና እና ወሊድ ጋር የተያያዙ የጤና መረጃ መጠይቆች

ተ.ቁ	ጥያቄ	መልስ እና ኮድ	ምርመራ
201	ከወለዱ በሁላ ባለፈው ስድስት ወር በጤና ኤክስቴንሽን ባለሙያ ተጎብኝተዋል?	1. አዎ 2. የለም	የለም ከሆነ ወደ 203 ይሂዱ
202	መልስዎ አዎ ከሆነ በጤና ኤክስቴንሽን ሙያተኛ ከወሊድ በፊት እና በሁላ ምን የምክር አገልግሎት አገኙ?		
	1. ልጅን ከመመገብ በፊት እጅን በውሃ እና በሳሙና ስለመታጠብ	1. አዎ 2. የለም	
	2. ጨቅላ ህጻን እንደተወለደ በፍጥነት ማድረቅ እና በልብስ ስለመጠቅለል	1. አዎ 2. የለም	
	3. ጨቅላ ህጻን እንደተወለደ በአንድ ሰአት ውስጥ ጡት ስለማጥባት	1. አዎ 2. የለም	
	4. በፍጥነት መታከም ስላለባቸው የጨቅላ ህጻን አደገኛ ምልክቶች	1. አዎ 2. የለም	
203	ጨቅላ ህፃን ሞቶብወት ያውቃል?	1. አዎ 2. የለም	
204	መጀመሪያ ሲወልዱ እድሜዎ ስንት ነበር?	-----	
205	ያሁኑን/ኒቱን ህፃን ፀንሰው ሳለ እርግዝና ክትትል ነበርዎ?	1. አዎ 2. የለም	
206	አዎ ከሆነ ስንት ጊዜ?	-----	
207	ክትትሉን የት ነበር ያደረጉ?	1. የመንግስት ተቆማት	

		2. የግል ተቋማት	
208	የመጀመሪያ ክትትልዎን በስንተኛ ወርዎ ጀመሩ?	-----months	
209	ወርሃዊ የእናቶች ኮንፈረንስ ተሳትፈው ያውቃሉ?	1. አዎ 2. የለም	
210	በእርግዝናዎ ወይም በወሊድ ወቅት ጤና ተቋማት በጤና ሙያተኛ በሚከተሉት ርዕሶች ላይ የምክር አገልግሎት አግኝተዋል?		
	1. በተወለዱ በ 1 ሰአት ውስጥ ጡት ስለማጥባት	1. አዎ 2. የለም	
	2. ስለ ልጆች ንጽህና አጠባበቅ	1. አዎ 2. የለም	
	3. ልጆች እንደተወለዱ 24 ሰአት ዘግይቶ ስለማጠብ	1. አዎ 2. የለም	
	4. እትብትን ንጹህ እና ሌላ ነገር ስለመጨመር	1. አዎ 2. የለም	
211	የአሁኑን ልጅዎን የት ወለዱ?	1. ቤት 2. ተቋም	መልስዎ ተቋም ከሆነ ወደ 214
212	ቤት ከሆነ ለምን?	1. ተቋም ስለሌለ 2. ትራንስፖርት ስለሌለ 3. አስቸኩይ ምጥ ስለሆነ 4. ብር ስለሌለ 5. የሚረዳኝ ስለሌለ 6. መሄድ ስለልፈለኩ 7. ሌላ ካለ	
213	ቤት ከሆነ ማን አዋለደዎት?	1. ቤተሰብ 2. ጎረቤት 3. ዘመድ 4. የልምድ አዋላጅ	

214	ተቋም ከወለዱ እንዴት ነው የወለዱ?	<ol style="list-style-type: none"> 1. ያለመሳሪያ እገዛ 2. ማህጸንን በማስፋት 3. በመሳሪያ እገዛ 4. በቀዶ ህክምና 	
215	ልጅዎ እንደተወለደ ክትባት ተከትቧል?	<ol style="list-style-type: none"> 1. አዎ 2. የለም 	
216	ለድህረ ክትትል ወደ ጤና ተቋም ተመልሰው ነበር?	<ol style="list-style-type: none"> 1. አዎ 2. የለም 	
217	መልስዎ አወ ከሆነ በስንተኛው ቀን ተመለሱ	-----ቀን	
218	መልስዎ አዎ ከሆነ ምክኒያቱ ምን ነበር?	<ol style="list-style-type: none"> 1. እረስቸው 2. ህጻኑን ስላላመመው 3. ለህጻኑ ምንም አይሰጠውም ብዩ 4. አላቀውም 	

ክፍል 3፤ ጡት አጠባብን በተመለከተ

ተ.ቁ	ጥያቄ	መልስ እና ኮድ	ምርመራ
301	ልጅዎን እስከ ስድስት ወር ጡት ብቻ አጥብተዋል?	<ol style="list-style-type: none"> 1. አዎ 2. የለም 	
302	የመጀመሪያውን የጡት ወተት ሰጥተውት ነበር?	<ol style="list-style-type: none"> 1. አዎ 2. የለም 	
303	የመጀመሪያውን የጡት ወተት በወለዱ በ 1 ሰአት ውስጥ ሰጥተው ነበር?	<ol style="list-style-type: none"> 1. አዎ 2. የለም 	
304	የመጀመሪያውን የጡት ወተት የማይሰጡ ከሆነ ለምን?	<ol style="list-style-type: none"> 1. ያመዋል ብዬ 2. አይጠቅምም ብዬ 	
305	በቀን ስንት ጊዜ ጡት ያጠቡ ነበር?	<ol style="list-style-type: none"> 1. 8-12ጊዜ 2. እንደአስፈላጊነቱ 	
306	እስከ ስድስት ወር ድረስ ምን አይነት ምግብ ይጠቅማል ብለው ያስባሉ ?	<ol style="list-style-type: none"> 1. የእናት ጡት 2. ተጨማሪ ምግብ 	
307	እስከ ስድስት ወር ባለው ጊዜ ተጨማሪ ምግብ ሰጥተው ያውቃሉ?	<ol style="list-style-type: none"> 1. አዎ 2. የለም 	

308	መልስዎ አዎ ከሆነ ለመጀመሪያ ጊዜ ህፃንዎ የተመገበው ምን ነበር?	<ol style="list-style-type: none"> 1. ውሀ 2. ማር 3. ቅቤ) 4. የላም ወተት 5. የተዘጋጀ ወተት 	
309	ልጅዎን በጡጦ አጥብተው ያውቃሉ?	<ol style="list-style-type: none"> 1. አዎ 2. የለም 	
310	መልስዎ አዎ ከሆነ ለምን ጡጦ ተጠቀሙ?	<ol style="list-style-type: none"> 1. ጡቴ ወተት ስለሌለው 2. ስራ ስለሚበዛብኝ(በመንግስት ስራ እና በቤት ስራ) 	

ክፍል 4፣ እትብትን በተመለከተ

ተ.ቁ	ጥያቄ	መልስ	ምርመራ
401	እትብቱን ለመቁረጥ አዲስ ምላጭ (ከአሁን በፊት ያላገለገለ) ተጠቅመው ነበር?	<ol style="list-style-type: none"> 1. አዎ 2. የለም 	
402	መልስዎ የለም ከሆነ ምን ተጠቀሙ?	<ol style="list-style-type: none"> 1. አሮጌ ወይም ያልተቀቀለ ምላጭ 2. ሌላ 	
403	እትብቱ ከተቆረጠ በኋላ እምብርቱ ላይ ምንም ነገር ሳይጨመር እንዲደርቅና ንጹህ እንዲሆን አድርገው ነበር?	<ol style="list-style-type: none"> 1. አዎ 2. የለም 	
404	መልስዎ የለም ከሆነ ምን አደረጉ	<ol style="list-style-type: none"> 1. በልብስ ሸፈንኩት 2. ሌላ 	
405	የልጁ እትብት ከተቆረጠ በኋላ ምንም ነገር አልተጨመረም?	<ol style="list-style-type: none"> 1. አዎ 2. የለም 	
406	መልስዎ አዎ ከሆነ ምን ጨመሩ?	<ol style="list-style-type: none"> 1. የኩብት እበት 2. ቅቤ 3. ቫዝሊን 4. ዘይት 	
407	የልጁ እትብት ቢደማ ወይም ፈሳሽ ቢፈስ ምን ያደርጋሉ?	<ol style="list-style-type: none"> 1. ወደ ጤና ጣቢያ አሄዳለው 2. ቤት ውስጥ እርዳታ እናደርጋለን 3. በራሱ እስኪደን እንጠብቃለን 	

ክፍል 5 የሙቀት እንክብካቤን በተመለከተ

ተ.ቁ	ጥያቄ	መልስ እና ኮድ	ምርመራ
501	ህጻኑ በተወለደ በመጀመሪያው 24 ሰዓት ውስጥ ከእናቱ ገላ ጋር ተነካክቶ እንዲቆይ ተደርጎ ነበር?	1. አዎ 2. የለም	
502	ልጁ እንደትወለደ በፍጥነት በልብስ ተጠቅልሎ ነበር?	1. አዎ 2. የለም	
503	ህጻኑ ከተወለደ/ች ከ 24 ሰዓት በኋላ ነው ገላውን/ዋን ያጠቡት/ቧት?	1. አዎ 2. የለም	

ክፍል 6: ስለ ጨቅላ ሂጻናት እንክብካቤ እና አደገኛ ምልክቶች እውቀት በተመለከተ

ተ.ቁ	ጥያቄ	መልስ	ምርመራ
601	ስለ ጨቅላ ህጻን እንክብካቤ ሰምተው ያውቃሉ?	1. አዎ 2. የለም	
602	እናት ለጨቅላ ህጻን የምትሰጠውን እንክብካቤ ያውቃሉ?	1. አዎ 2. የለም	
603	እትብት በተቆረጠ በ 7 ቀን ውስጥ የሆነ ነገር ይጨመርበታል ብለው ያስባሉ ከታዘዘ መድሃኒት ውጭ?	1. አዎ 2. የለም	
604	እትብት ከተቆረጠ በኋላ በምንም ነገር ሳይሸፈን መያዝ አለበት ብለው ያስባሉ?	1. አዎ 2. የለም	
605	ጨቅላ ህጻን ለመጀመሪያ ጊዜ በተወለደ ከ 24 ሰዓት በኋላ መታጠብ አለባቸው ብለው ያስባሉ?	1. አዎ 2. የለም	
606	ጨቅላ ህጻን በተወለደ በ 1 ሰዓት ውስጥ ጡት መጥባት አለባቸው ብለው ያስባሉ?	1. አዎ 2. የለም	
607	ለስድስት ወር የእናት ጡት ብቻ ማጥባት ይጠቅማል ብለው ያስባሉ?	1. አዎ 2. የለም	
608	እናቶች ለአዲስ ህጻን እስከ 6 ወር ድረስ የእናት ጡት ብቻ መመገብ አለባቸው ብለው ያስባሉ?	1. አዎ	

		2. የለም	
609	ስለ ጨቅላ ህጻን አደገኛ ምልክቶች ያውቃሉ?	1. አዎ 2. የለም	
610	መልስዎ አወ ከሆነ ከሚከተሉት የትኞቹ ናቸው		
	1. ቶሎ ቶሎ መተንፈስ	1. አዎ 2. አይደለም	
	2. የሰውነት ሙቀት መቀነስ	1. አዎ 2. አይደለም	
	3. ትኩሳት	1. አዎ 2. አይደለም	
	4. ድካም ወይም አራስን መሳት	1. አዎ 2. አይደለም	
	5. የእትብት መድማት እና መቁሰል	1. አዎ 2. አይደለም	
	6. ጡት አለመጥባት ወይም አለመመገብ	1. አዎ 2. አይደለም	
	7. ማንቀጥቀጥ	1. አዎ 2. አይደለም	
	8. የሰውነት ቢጫ መሆን	1. አዎ 2. አይደለም	