

**MOTHERS' KNOWLEDGE AND PRACTICE ON ESSENTIAL
NEWBORN CARE AND ASSOCIATED FACTORS IN EAST
BADEWACHO WOREDA, HADIYA ZONE, SOUTHERN ETHIOPIA**

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**A RESEARCH THESIS SUBMITTED TO JIMMA UNIVERSITY
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JIMMA, ETHIOPIA

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ABSTRACT

Background: Newborn care is an immense importance for the proper development and healthy life of a baby. Globally, more than 2.7 million newborns die before reaching one months of the age every year and most of the new born deaths occur at home. Promotion of mothers' knowledge and practice on essential newborn care is one strategy for improving newborn health outcomes that can be delivered in the home as well as facilities.

Objectives: The aim of this study was to assess mothers' knowledge and practice on essential newborn care and associated factors in East Badewacho woreda, Hadiya zone.

Methods: Community based cross sectional study design was done from March 1 to April 30, 2018. The sampled population were 399 mothers who gave live births within the last six months prior to actual data collection. Multistage sampling technique was employed. Data was collected by using semi-structured questionnaire. The collected data were entered, in Epi-data version 3.1 and exported into SPSS version 21 for analysis. Bivariate logistic regression was used to identify candidate variables at p-value of ≤ 0.25 . Those variables ≤ 0.25 in bivariate logistic regression were entered into multivariate logistic regression model to detect statistically significant associations between outcome and explanatory variables at p-value of <0.05 . Odd ratio was used to measure the strength of association at 95%CI.

Result: A total of 387 mothers were included in this study with completion rates 97%. 37.5% of the mothers had good knowledge on essential newborn care and 34.1% of the mothers had good practice on ENC. Ever heard about ENC [AOR =4.375,CI(2.708,7.07)], ANC follow up [AOR =7.79,CI(1.053,20.782)] and PNC follow up [AOR=1.71,CI(1.053,2.782)] were significantly associated with knowledge of essential newborn care and educational status of the husband[AOR=0.24,CI(0.089,0.64)] and [AOR=0.314,CI(0.126,0.78)],place of delivery[AOR=0.024,CI(0.009,0.068)]and knowledge on essential newborn care [AOR=2.03,CI(1.223,3.371)] were significant predictors for practice of ENC.

Conclusion and recommendation: In this study, around one-third of the mother had good knowledge and practice on essential newborn care. Routine counselling to mothers about essential newborn care during the time of ANC, delivery and PNC follow up were important for promotion of ENC knowledge and practice.

Keywords: Knowledge, Practice, Newborn care, Essential newborn care, Ethiopia.

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ABBREVIATIONS AND ACRONYMS

ANC-Antenatal care

AOR-Adjusted odd ratio

COR-Crude odd ratio

CBE-Community Based Education

CBNC-Community based newborn care

CI-Confidence Interval

EDHS-Ethiopian Demographic Health Survey

ENC-Essential Newborn Care

HEWs-Health Extension Workers

IRB-Institutional Review Board

MCH-Maternal and child health service

MDG-Millennium Development Goal

NMR-Neonatal Mortality rate

PI-Principal Investigator

PNC-Postnatal care

SDG-Sustainable Development Goal

SNNPR-Southern Nation Nationalities and Peoples Region

WHO-World Health Organization

CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND:

Newborn care is an immense importance for the proper development and healthy life of a baby. It signifies the beginning of life and provides a foundation for future health of the nation(1).

Newborn health and survivals are closely linked to essential newborn care provided within the first days and weeks of an infant's life by parents at home and within the community. It is strongly influenced by women's social status, health status and home care practices for mother and newborn at home(2,3).

Essential newborn care (ENC) is a set recommendation that designed to improve the health of newborns through interventions before conception, during pregnancy, at and soon after birth and in the postnatal period. It includes thermoregulation, clean delivery and cord care, initiation of breastfeeding, immunization, eye care, recognition of danger signs, care of the preterm or low birth weight infant and management of newborn illnesses(4,5).

Community-Based Newborn Care (CBNC) in Ethiopia is a national package that aims to improve newborn survival through the Health Extension Program. This will involve implementing a newborn care package along the continuum of care from pregnancy to post-birth through frontline community workers, including sepsis. A set of practices that reduces newborn morbidity and mortality has been identified as essential and these include clean cord care (cutting and tying of the umbilical cord with a sterilized instrument and thread), thermal care (drying and wrapping the newborn immediately after delivery and delaying the newborn's first bath for at least six hours or several days to reduce hypothermia risk) and initiating breastfeeding within the first hour of birth. Neonatal health and survival is enhanced by providing ENC and Mothers are the key person for providing newborn care (6,7).

According to Ethiopian demographic health survey (EDHS) 2016 report institutional delivery in Ethiopia was 26%. This shows that most of the babies are born at home. Therefore, increasing community awareness on ENC and improving care seeking practice of mother is important for improving newborn survival(8).

1.2 STATEMENT OF THE PROBLEM

Neonatal mortality is one of the world's most neglected health problems. It is estimated that globally, 2.7 million neonates die before they reach one month of age and 98 % of this neonatal deaths occur in low and middle-income countries. Most of neonatal deaths are preventable regardless of whether delivery was in the home or in a health care facility, and regardless of whether a skilled attendant was present at birth. The major contributing factors for neonatal mortality include: Unhygienic cord care, Neonatal hypothermia(early bathing), lack of early breastfeeding, lack of identification and appropriate referral of sick neonates(9–11).

Neonatal mortality rate (NMR) in Africa remains the highest at 32 deaths per 1,000 live births contributing 38% to the global NMR and 30% to the continental burden of under-five mortality(12).

In Ethiopia, around 87,000 newborns die every year in the first one month of life. The risk of death is highest in the first 24 hours of life when more than half of deaths occur and about three-quarters of all neonatal deaths occur within the first weeks of life and most of neonatal deaths occur at home. According to 2016 national report in Ethiopia the NMRs were estimated to be 29 per 1000 live births. Also, in Southern Nation Nationalities and peoples regions (SNNPR) the NMRs were estimated to be 35 per 1000 live birth which is somewhat higher than national report (8,13).

The valuable gift of all the newborn needs certain ENC in order to minimize the risk of illness and maximize their growth and development. The major causes for neonatal deaths in Ethiopia are complications related to Sepsis, Asphyxia, Birth injury, Tetanus, Preterm birth and congenital malformations(14,15).

Several factors have been identified as barriers to access care to the newborn especially in developing countries; these include unavailability of the services, inadequate number of skilled personnel, geographical inaccessibility and poor quality of care, financial constraints, no perceived need for such services, cultural practices, mothers awareness or knowledge about newborn care, maternal health and socio- demographic characteristics(16).

Evidence from different studies which was conducted in Ethiopia stated that mothers have poor practice regarding to the ENC. This shows that newborn care is strongly influenced by home care traditional practices in the community(17–21).

According to Hadiya zone health office report neonatal deaths were estimated to be 23 per 1000 live births in 2017/18. Therefore, assessment of mother's knowledge and practice on ENC is important for promotion ENC and for reducing of neonatal death.

Also, in this district it is observed that when mothers come to attend labour in health institution they bring old and dirty cloth for wrapping of the expected newborn, application of substance in the cord stump after cord cut in the home , bathing of the newborn within the first 24 hrs, lack of early and exclusive breast feeding are common.

Therefore, this study aimed to identify the gaps in the knowledge and practices towards essential newborn care among mothers in East Badewacho woreda and to determine the associated socio-demographic and obstetric factors.

1.3 SIGNIFICANCE OF THE STUDY

Many studies on newborn morbidity and mortalities concluded that one of the important reasons for the high level of newborn deaths in the developing countries is poor household newborn care practices and most of neonatal deaths occur at home due to lack of ENC. Assessment of mother's knowledge and practice on ENC was one of the key prerequisite information required in designing strategy that can improve newborn health outcomes and end the preventable causes of neonatal morbidity and mortality.

Therefore, the finding from this research could be used as baseline information to plan appropriate interventions towards improving newborn health care services in East Badewacho district health office.

Furthermore , the results of this study would be useful to provide an evidence of the gaps found in the area for relevant stakeholders such as HEWs, community health workers and health professionals who are working in the maternal and child health unit in district health office and health facility respectively.

CHAPTER TWO: LITERATURE REVIEW

In this chapter publications and studies on the care of the newborn in line with the study objectives were reviewed. It is divided into three study themes of knowledge, practices and associated factors that influence the essential newborn care.

2.1. Knowledge of the mothers about essential newborn care

According to the study reported in different district of India 64.6%, 87%.76.5% and 78% of the mothers were knowledgeable on essential newborn care (3,14,22,23).

A study conducted in New Delhi India revealed that around 68% of the mothers were knowledgeable on newborn Care. Another study done India reported that 50.3% of the mothers were knowledgeable on essential newborn care(24,25).

A study done in Iran shows that 91.8% of the mothers were knowledgeable essential newborn care .Another descriptive cross sectional study conducted in Nepal shows that 61.6% of the mothers have knowledgeable regarding newborn care(26,27).

A study reported in Nepal shows that 41.3% of the respondents had knowledgeable on newborn care. Similarly, another study done in Nepal revealed that 47.2% of the respondents were knowledgeable on essential newborn care (7,28).

Community based cross sectional study conducted in Gamo goffa zone Southern Ethiopia revealed that (57.6%) of the mothers had good knowledge on essential newborn care. Another study reported in Gulomekada District, EasternTigray shows that 80.4% of the mothers were knowledgeable on ENC at home (29,30).

2.2. Practice of the mothers about Essential newborn care

According to the study conducted in Chennai, India reported that 46.7% of the mothers practice newborn care. Another study done in west Bengal, India revealed that 54% of the respondents were practice essential newborn care at home(25,31).

A study conducted in Nepal reported that 73.3% of respondents had adequate practice on essential newborn care. Another Study done in Bangladesh ,revealed that the level of practice of the respondent mothers on neonatal care observed that only 5.5% mothers performed excellently where as 71.8% mother performed poorly and only 22.8% of mother performed optimally(7,32).

A cross sectional study carried out in Ghana shows that the overall prevalence of adequate new born care comprising good cord care, optimal thermal care and good neonatal feeding practices was only 15.8%. Another study conducted in rural eastern Uganda shows that 11.7% of the mothers were utilizes essential newborn care (33,34).

A community based cross sectional study conducted in Awabel district, east Gojjam revealed that 23.1% of the mothers practice essential newborn care. However, Another, study done in southwest Ethiopia reported that the prevalence mothers' practice on ENC was 59.5%(17,18).

According to the study reported in Aksum town, Tigray region Ethiopia, 26.7% of the study participants were fulfilled all the essential newborn care practices. Another study conducted in in Mandura District, Northwest Ethiopia reported that 40.6% of the respondents were utilize essential newborn care (20,35)

2.3. Factors associated with knowledge of mothers on essential newborn care.

2.3.1 Socio demographic characteristics

A study conducted in rural Bangalore, India shows that the age of mothers, Age of the infant, Mother's education, occupation and ever heard about ENC had significantly associated with their knowledge on home based neonatal care. Another study done in Kenya reported that occupation, marital status and educational status are all significantly associated with knowledge of essential newborn care(3,36).

A study reported in Iran, Sri lanka and Bangladesh shows that occupation, mother's age, occupation, residency, mother's level of education and father's level of education were significantly associated with knowledge of essential newborn care (37–39).

According to the study done in Nepal and different district of India age of the mothers, ethnicity, educational status, ever heard about essential newborn care and occupation were significant relationship knowledge of newborn care(14,23,25,27,40).

A study conducted in Gulomekada District, Eastern Tigray revealed that marital status and educational status are significantly associated with knowledge of essential newborn care at home .Another study done in North West Ethiopia shows that monthly income, mother's educational status, husband educational status and source of information were the factors that significantly associated with maternal knowledge on neonatal danger signs(30,41).

2.3.2 Obstetric characteristics

A study reported in India shows that place of delivery, parity, postnatal follow up and counselling during postnatal follow up were significantly associated with knowledge of essential newborn care. Another study done in Colombo shows that parity and gravidity were significantly associated with knowledge of essential newborn care (42,43).

A cross sectional study conducted in Kenya reported that lack of counselling on newborn care during pregnancy, parity and incomplete or no antenatal visits were significantly associated with knowledge of essential newborn care. Another the study done in South Sudan shows that information during ANC follow up and PNC follow were significantly associated mother's knowledge of essential newborn care(36,44).

2.4 Factor associated with practice of essential newborn care

2.4.1 Sociodemographic characteristics

A study conducted in Pakistan and Rural Pondicherry, India shows that maternal age, sex of the infant, maternal education, family income and occupation were significantly associated with ENC practice. Another study done in India shown that age and knowledge of the mother on essential newborn care were significantly associated with practice of newborn care (45,46).

According to the study in democratic republic of Congo reported that educational status, marital status and source of information were significantly associated with breast feeding practice. Another study conducted in Aksum ,Tigray region reported that Educational status, occupation ,marital status and household income were significantly relationship with Essential newborn care utilization(20,47).

A community based cross sectional study done in Eastern Tigray revealed that knowledge of the mother on essential newborn care, residency, ethnicity and occupation were significantly association with the practice of essential newborn care at home. Another study conducted in southwest Ethiopia revealed that residency, maternal education and husband's occupation were identified as predictors of neonatal care practice (18,30).

2.3.2 Obstetric characteristics

A study conducted in Nepal and Bangladesh shown that ANC follow up, PNC follow up and place of delivery were significantly associated practice of neonatal care(32,48).

A study done in Nepal shows that knowledge on ENC and place of delivery were significantly associated with practice of essential newborn care Another study done in Bihar State, India revealed that parity and place of delivery was significantly associated with practice of cord care(49,50).

A study conducted Gujarat India revealed that ANC follow up, place of delivery, PNC follow up and knowledge of the mother on essential newborn cares were significantly associated with newborn care practice. Another study in three rural district of Uganda shows that ANC follow up and place of delivery were significantly associated with newborn care practice(51,52).

According to the study conducted in Ghana, Western and Eastern Uganda shown that ANC visit, place of delivery and knowledge of ENC were significantly associated with newborn care practice(33,34,53).

Study conducted in Mandura district, Benishangul Gumuz region, Ethiopia revealed that advice during ANC follow up and PNC follow up were significantly associated with essential newborn care practice. Another study conducted in the rural Community of Awabel District, East Gojjam Zone, Amahara region , Ethiopia reported that immediate PNC visit, advise about ENC practices during ANC and PNC follow up were found to have significantly associated with practice of essential new born care (17,35).

A study conducted in Aksum, Tigray region reported that gravidity, parity, frequency of ANC visit, counselling during place of delivery and ever heard about essential newborn care were significantly associated with Essential newborn care utilization(20).

CONCEPTUAL FRAMEWORK

The conceptual framework is developed after reviewing different literature. The arrows in the diagram represent the relationship between the independent and dependent variables. As shown in the diagram, knowledge and practice essential newborn care can be affected by socio-demographic and Obstetric characteristics; on the other hand, knowledge can affect practice of ENC.

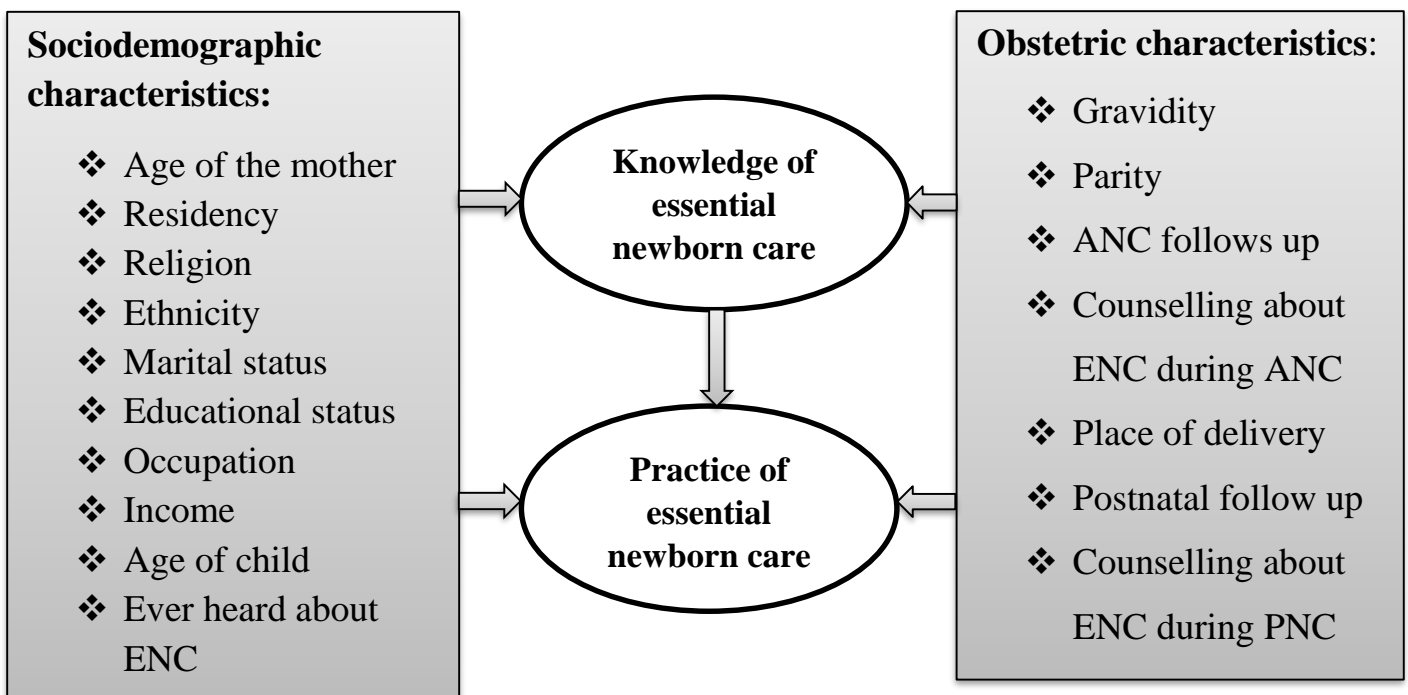


Fig 1: conceptual framework was developed based on literature.

CHAPTER THREE: OBJECTIVES

3.1 GENERAL OBJECTIVE

To assess mothers' knowledge and practice on essential newborn care and associated factors in East Badewacho woreda, Hadiya zone, southern Ethiopia 2018.

3.2 SPECIFIC OBJECTIVES

1. To assess the level of knowledge of the mothers on essential newborn care.
2. To determine the level of practice of the mothers on essential newborn care.
3. To identify factors associated with knowledge of essential newborn care by the mothers
4. To identify factors associated with Practice of essential newborn care by the mothers.

CHAPTER FOUR: METHODS AND MATERIALS

4.1 Study area and period

The study was conducted in East Badewacho woreda, Hadiya zone, Southern Ethiopia from March 1, 2018 to April 30, 2018. The study area is located at 342km far in the south from Addis Ababa ,which is the capital city of Ethiopia and about 121 Km far from Hawassa , which is the capital city of SNNPR and situated at 97 Km in East from the Zonal capital of Hosanna.

According to woreda health office report there were **7**(seven) health centres, **36**(thirty six) health posts, **8**(Eight) private clinics and **12**(twelve) drug pharmacies in East Badewacho woreda. It is separated from the rest of the Zone by Halaba special woreda in the south, Oromia region in the East, Wolayita zone in the north and west Badewacho and Kembata-Tembaro Zone in the west .Also, astronomically to be found between 70 00' 05''N – 70 18' 35'| N latitude and 370 52| 0'E - 380 11 |00'E longitude.

In East Badewacho woreda there are **33** rural and **3** urban Kebeles with total population of **175,660**. From those, **84,844** (48.3%) of them were males and **90,816**(51.7%) of them were females, out of those females **57,089**(32.5%) of them were at the reproductive age groups. Among the reproductive age groups, **2130**(1.23%) of the mothers had less than six month of age children in the woreda.

4.2 Study design

A Community based cross sectional study design was carried out.

4.3. Population

4.3.1 Source population

All mothers with an infant less than six months old in east Badewacho woreda.

4.3.2 Study population

All Mothers with an infant less than six months old from selected Kebeles of the East Badewacho woreda.

4.3.3 Sampling unit

List of all Mothers with an infant less than six months old from selected Kebeles of the East Badewacho woreda.

4.3.4 Study unit

All selected Mothers with an infant less than six months old from selected Kebeles of the East Badewacho woreda.

4.3 ELIGIBILITY CRITERIA

4.3.3 Inclusion criteria

Those mothers who had given a live birth in the last six (6) months from August 28, 2017 to February 28, 2018 were included.

4.3.4 Exclusion criteria

All mentally and physically incapable mothers with an infant less than six months old and unable to respond during data collection were excluded.

4.4 SAMPLE SIZE AND SAMPLING PROCEDURES

4.4.1 Sample size determination

Table 1-Sample size determination for outcome variables and associated factors (30).

	Prevalence	Proportion	Formula	Sample size
Objectives	P1= knowledge on essential newborn care	P1=80.4%	Single population $n = \frac{z \left(\frac{\alpha}{2}\right)^2 * P(1 - p)}{d^2}$	242
	P2= practice on essential newborn care	P2=92.9	Single population $n = \frac{z \left(\frac{\alpha}{2}\right)^2 * P(1 - p)}{d^2}$	101
	P11= factors associated with knowledge of ENC	P11*=69%	Epi info7 software	168
		P12*=11%	Stat Cal is used	
P22= factors associated with practice of ENC	P22*=79%	Epi info7 software	160	
		P23*=19%	Stat Cal is used	

By comparing the sample size of each objective we take the largest sample size which was **242**, then by considering non-response rate **10%** and design effect **1.5** the final sample size would become 399. $n = [(242 \times 0.1) + 242] \times 1.5 = 399$

4.4.2 Sampling technique and procedures

Multi-stage sampling technique was employed for the Selection of the study population. Initially, the woreda is stratified as rural and urban kebeles. In East Badewacho woreda there are **33** rural and **3** urban Kebeles. From those, **10** Rural and **2** Urban Kebeles were selected by using lottery method. According to data obtained from East Badewacho woreda health office, those mothers who have less than six month old infants were estimated to be **2130**. Among those, **793** mothers gave a birth in the last six month in selected Kebeles.

Those mothers who had gave a live birth in the last six (6) months from August 28, 2017 to February 28, 2018 was taken from family registration folder from each selected Kebeles health post and coded before actual data collection to create a sampling frame. Sample size was determined proportionately to each Kebeles. Study participants were selected by Simple random sampling method from coded mothers once proportionately to size allocation. Again, the selected mothers ticked by name and address from registered mothers in each health post were given to HEWs and leaders.

The name and addresses of mothers who have less than six month old infants are specified and locations would be identified in collaboration with the Kebele's HEWs and leaders. The identified mothers who have less than six months infant were interviewed by house to house visit. Selected study participant who refused to participate in this study was considered as non-respondent.

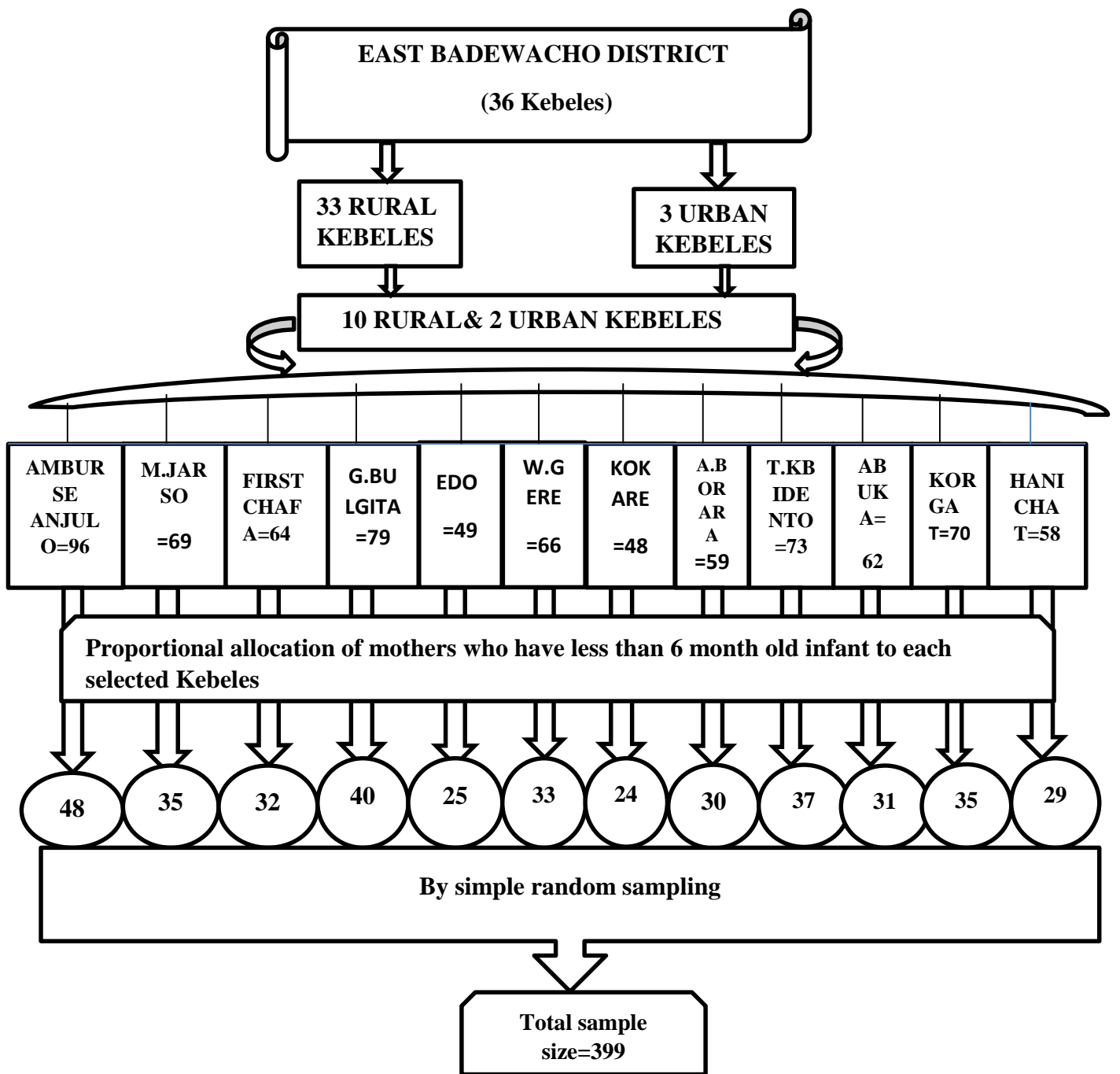


Fig 2: Schematic presentation of sampling procedure in East Badewacho district, Hadiya zone, southern Ethiopia 2018.

4.5. STUDY VARIABLES

4.5.1 Dependent variable

- Knowledge of the mothers on essential newborn care
- Practice of the mothers on essential newborn care.

4.5.2 Independent variables

- **Socio demographic characteristics:** Age, Ethnicity, Residency, Religion, Marital status, maternal educational status, Husband educational status, Occupation, Monthly income, Age of the child and Ever heard about ENC.
- **Obstetric characteristics:** ANC follow up, Place of delivery, PNC follow up, Counselling during ANC, Counselling during PNC, Gravidity and Parity.

4.6. OPERATIONAL DEFINITIONS

Essential newborn care: Refers to the care provided to the baby from birth to 28 days by the mothers that include: Cord care, Thermal care, Breastfeeding, Immunization at birth and newborn danger signs identifications.

Knowledge on ENC: Those mothers who respond correctly for knowledge related questions on essential newborn care.

Good Knowledge: Summery index equal to or above the mean score for knowledge related questions from the study population.

Poor knowledge: Summery index below the mean score for knowledge related questions from the study population.

Practice on ENC: The intended actions that the respondents done or do to give care for the newborn.

Good practice: is the summary index equal to or above the mean score for the practice question from the study population.

Poor practice: is the summary index below the mean score for the practice question from the study population.

Cord care practice at home: cutting and tying of the umbilical cord with a boiled instrument and thread and washing of hands before handling of the baby at home.

Knowledge on neonatal danger sign: A woman was asked questions and considered as knowledgeable on key danger signs of neonate, if she can mention spontaneously at least three or more of the ten key danger signs for neonate(29,54).

4.7. DATA COLLECTION INSTRUMENT AND PROCEDURE

4.7.1 Data collection instrument

The semi structured questionnaire was adapted from 2016 national report and previously done related studies (8,30,55). It is already prepared in English then it was translated into the local language Hadiyagna by experts and then re-translated back to English by different individuals who were blind to the original version of the questionnaire in order to ensure its completeness and consistency. It consists of information on socio-demographic characteristics (15 question), Obstetric characteristics (10 question), Knowledge of the mothers on ENC (13 questions) and Practice of the mothers on ENC (19 question). Finally, the questions related to knowledge and practices on ENC were dichotomized into good and poor based operational definition.

4.8.2 Data collection procedure

The data was collected from March 1-30/2018 from selected Kebeles. It was collected from all selected Kebeles by face to face interviewing the mother using hadiyagna language version instrument. A respondent who was not present at home during data collection time were revisited. Two Bsc nurses for supervision and six diploma nurses for data collection were recruited.

4.9. DATA PROCESSING AND ANALYSIS

The collected data was checked manually for its completeness and consistency before data entry. The gathered data was coded, cleaned and entered into Epi-data version 3.1 and export to SPSS version 21 for data analysis.

The simple descriptive analysis such as statements, tables, charts and graphs were used to present the result of analysed data. After descriptive statistics, logistic regression was performed. Both bivariate and multivariate logistic regression models were used to determine factors associated with knowledge and practice of ENC.

To identify factors associated with knowledge and practice of essential newborn care, variables with P-value ≤ 0.25 in the bivariate logistic regression were entered into multivariate logistic regression model. The statistical association between the different independent variables in relation to dependent variables were measured using OR at 95% CI. P-values <0.05 in multivariate logistic regression was considered as statistically significant. Model of fitness were checked by Hosmer and Lemeshow statistic test and its p-value were equals to 0.583 and 0.824 for both of outcome variables.

4.10. DATA QUALITY MANAGEMENT

The semi structured questionnaire already prepared in English was translated into local language hadiyagna, and then it was retranslate back to English in order to ensure its consistency.

The pre-test was done on 5 % of sample size outside of the study area in west Badewacho woreda which is 18km far from the study areas. Sequences of the question, grammar and spelling errors were amended. The Cronbach's α test was used to assess the internal reliability of the questions pertaining to socio-demographic characteristics, which was 0.87, Obstetric characteristics, which was 0.75, knowledge on ENC, which was 0.78 and relating to practices on ENC, which was 0.8.

Six diploma nurses were recruited to conduct an interview. Two supervisors' who has first degree in nursing were assigned to supervise the data collection process with the responsibility of supporting the data collectors, checking filled out questionnaires daily for completeness and providing feedback for data collectors. Data collectors and supervisors were selected based on the ability to speak the local language hadiyagna and previous experience of data collection.

Training was given for one day on the area of the objective of the study, relevance of the study, confidentiality of information and techniques of interview for data collectors and supervisors. Supervisors would supervise and check their respective data collectors during data collection time. Every questionnaire was cross checked daily by the supervisors and principal investigators. Problems faced during data collection were discussed over night with data collectors and the supervisors.

4.11 ETHICAL CONSIDERATIONS

Ethical clearances were obtained from the institutional Review Board (IRB) of Jimma University, institute of Health faculty health science. Official letter were written from school of Nursing and Midwifery to East Badewacho woreda health office. Similarly, verbal consent was obtained from each study participant after explanation of the objective of the study. All responses were kept confidential.

4.12 DISSEMINATION PLAN

The final result of this study will be presented to Jimma University, institute of health faculty of health science and school of Nursing and Midwifery and to East Badewacho woreda health office. The findings will be disseminated to different stakeholders those who have a contribution to improve maternal and child health services. Finally, the findings may also be presented in different seminars and workshops and Efforts will be made to publish it in related national and international journals.

CHAPTER FIVE: RESULT

5.1 Socio demographic characteristics of respondent

A total of 387 mothers were willing and able to participate with over all response rates of 97%. Accordingly, analysis was done based on 387 participants.

The women's age range from 18 to 39 years, with a mean of 26.85 (\pm 5.42) years. Half of the respondents, 199(51.4%) were between the age of 25-34 years. Three hundred seventy three (96.4%) of respondents were married. Regarding to educational status, 164(42.5%) of the mothers were completed primary level and 144(37.2%) of the husbands were complete secondary level. Regarding to their religion and ethnicity, 292(75.5%) of the respondents were protestant and 291(75.2%) of the respondents were Hadiya. Concerning their occupation, 252(65.1 %) of the mothers were house wives.

Table: 2. Socio demographic characteristics of women in East Badewacho woreda, Hadiya Zone, Southern, Ethiopia 2018(n=387)

Variables	categories	Frequency	Percent
Age of the mother	18-24	139	35.5
	25-34	199	51.4
	>=35	49	12.7
Residency	Rural	323	83.5
	Urban	64	16.5
Religion	Protestant	292	75.5
	Orthodox	54	14
	Muslim	32	8.3
	Catholic	9	2.3
Ethnicity	Hadiya	291	75.1
	Wolayita	41	10.6
	Kambata	37	9.6
	Others*	18	4.7
Marital status	Married	373	96.4
	Widowed	9	2.3
	Others*	5	1.3

Educational status of mothers	Not educated	64	16.5
	Primary level	164	42.5
	Secondary level	112	29.4
	Diploma and above	47	12.1
Educational status of the husband	Non educated	29	7.5
	Primary level	100	25.8
	Secondary level	144	37.2
	Diploma& above	114	29.5
Mother's occupation	House wife	252	65.1
	Merchant	56	14.5
	Farmer	21	5.4
	Gov't employee	52	13.4
	Student & daily labourer	6	1.6
Husband's occupation	Gov't Employee	97	25.1
	Farmer	151	39
	Merchant	125	32.5
	Student & daily labourer	14	3.6
Monthly income	<1000	76	19.6
	1000-4000	250	64.6
	>=4000	61	15.8
Age of the child	<3 months	122	31.5
	>=3 months	265	68.5
Sex of the child	Male	235	60.7
	Female	152	39.3

*=Oromo, Tigre, Amahara; **= divorced & single

5.2. Source of information

Among the respondents, 157(40.6%) of mothers were heard about ENC and from them 90 (57.3%) of the mothers were heard from health professional and 151(96.2%) of the mothers were heard about breast feeding.

Table 3:-source of information of the mothers on ENC in East Badewacho woreda, Hadiya Zone, Southern Ethiopia 2018(n=387)

Variables	Categories	Frequencies	Percent
Ever heard about ENC	Yes	157	40.6
	No	230	59.4
Source of information, ever heard about ENC	Health professional	90	57.3
	HEWs	68	43.3
	Mass media	58	36.9
	Relative and friends	15	9.5
Areas of information heard about ENC	Breast feeding	151	96.1
	Cord care	81	51.6
	Thermal care	84	53.5
	Immunization	123	78.3
	Neonatal danger sign	29	18.4

5.2 Obstetric characteristics of respondent

Out of the total respondent, 316 (81.7%) of the mothers attended ANC follow up during last pregnancy and 249(78.8%) of the mothers followed four times and above. In case of counselling about ENC during ANC, only 130(41.1%) of the mothers were counselled about ENC and 118(90.7%) of the mothers were received counselled on breast feeding.

Three hundred thirty six (86.4%) of study participants were gave birth at health institution. In case of PNC follow up during last pregnancy, only 152(39.3%) of the respondents attended PNC follow up and 132(86.8%) follows one times. Concerning counselling about ENC during PNC follow up, 118(64.4%) of the mothers were counselled about ENC and 76(64.4%) of the mothers were counselled on breast feeding.

Table-4. Obstetric characteristics of the mothers in East Badewacho woreda, Hadiya Zone, Southern Ethiopia 2018(n=387).

Variables	Categories	Frequency	Percent
Number of pregnancy	<2	127	32.8
	2-4	153	39.5
	>=4	107	27.7
Number of child born alive	<2	124	32
	2-4	170	43.9
	>=4	93	24.1
ANC follow up during last pregnancy	Yes	316	81.7
	No	71	18.3
Times of ANC follow up	one times	10	3.2
	2-3 times	57	18
	4 times & above	249	78.8
Counselled about ENC during ANC	Yes	130	41.1
	No	186	58.9
Area of counselling during ANC	Breast feeding	118	91.5
	Cord care	79	60.7
	Thermal care	76	58.4
	Immunization	90	69.2
	Neonatal danger sign	19	14.6

Place of delivery	At health institution	336	86.4
	At home	51	13.6
PNC follow up	Yes	152	39.3
	No	235	60.7
Times of PNC follow up	<3 times	132	86.8
	>= 3 times	20	13.4
Counselled about ENC during PNC follow up	Yes	118	77.6
	No	34	22.4
Area of counselling during PNC follow up	Breast feeding	76	64.4
	Cord care	63	53.4
	Thermal care	58	49.1
	Immunization	56	47.4
	Neonatal danger sign	16	13.5

5.3. Knowledge of the mother on essential newborn care.

Out of the total of 387 study participants, 145(37.5%) of the respondents had good knowledge on ENC and 232 (62.5%) of the respondents were poor knowledge on ENC.

Study participants were asked about cord care, 211(54.5%) of the participants responded that substance is applied on the cord but only 122(57.8%) of the participants responded medication (drug) that is ordered by health professional should be applied to the cord stump.

For thermal care of the baby, 215(55.6%) of the mothers correctly answer that the first bathing for a newborn was after 24 hours of birth.

Regarding to timely initiation of breast feeding, 235(60.8%) of the mothers respond about time of initiation breast feeding but, only 183 (78.3%) of them answered the baby should be started breastfeeding within one hour. Among the respondents, 171(44.2%) of the mothers had good knowledge on neonatal danger signs and they mentions three and above.

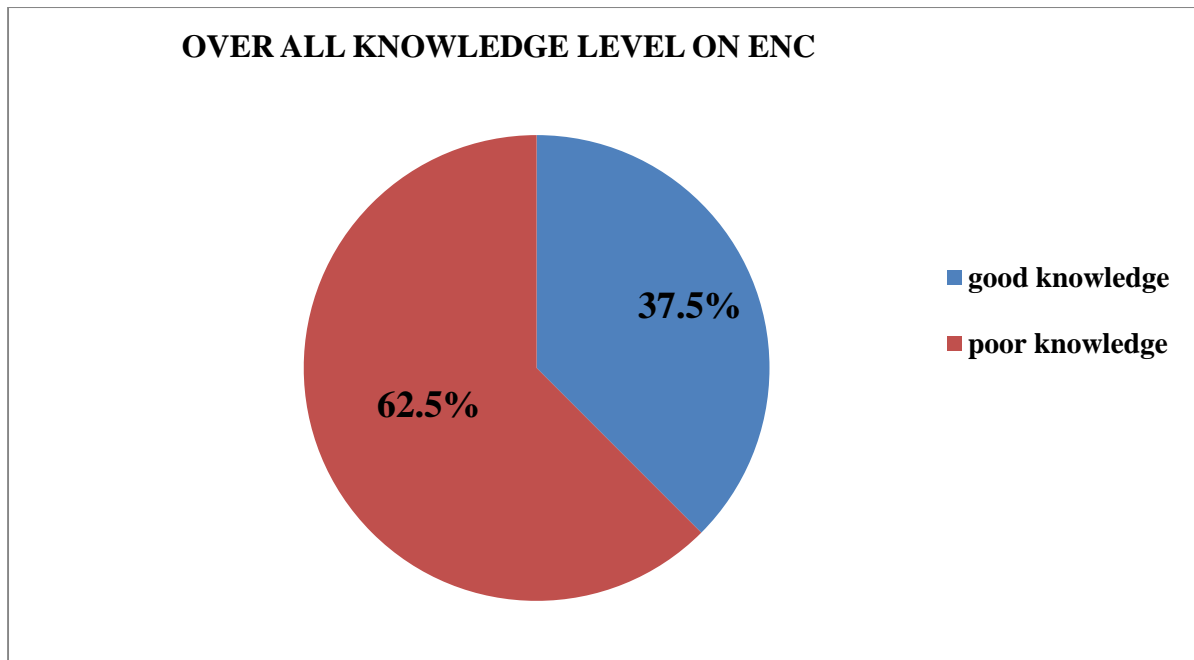


Fig 3.Over all essential newborn care knowledge among mothers in East Badewacho woreda, Hadiya zone, southern Ethiopia, 2018.

Table-5 knowledge of the mother on ENC in East Badewacho woreda, Hadiya Zone, Southern, Ethiopia 2018(n=387)

Variables	Response	Frequency	%
Handling of umbilical cord after cut	Without dressing or uncovering	174	45
	with dressing or covering	213	55
Soiled umbilical stump can be cleaned with	with pure water	232	59.9
	with any water	155	40.1
Any substances can be applied on the umbilical stump after cord cut	Yes	211	54.5
	No	176	45.5
Materials applied on your baby's umbilical stump after it is cut	Chlorohexidine	122	57.8
	Butter	82	38.8
	Vaseline	37	17.6
Method used to keep a Newborn warm	Skin to skin contact	217	56.07
	Wrapping and covering with clean cloth	182	47

Time for initiation of first bath after delivery	Immediately	74	21.7
	Within 24 hr	98	22.7
	After 24 hr	215	55.6
Time of initiation of breast feeding	Yes	235	60.7
	No	153	39.5
Time for initiation breast feeding after delivery	Within 1hr	184	78.3
	After 1hr	51	21.7
Feeding of colostrum	Yes	138	35.7
	No	249	64.3
Information on immunization	Yes	149	38.5
	No	238	61.5
Advantage of immunization	Prevent from disease	136	91.2
	Don't know	13	8.8
Knowledge on neonatal danger sign	Yes	219	56.6
	No	168	43.4
The mentioned danger sign	Fast breathing	121	55.2
	Lethargy	86	39.2
	Convulsion	75	34.2
	Fever	187	85.3
	Hypothermia	90	41.1
	Poor feeding	130	59.3
	Persistent vomiting	60	27.3
	Diarrhoea	45	20.5
	Jaundice	41	18.7
	Generalized weakness	28	12.7

5.4 Practice of the mother on essential newborn care

From the study participant, 132(34.1%) of the mothers had good practice on ENC and 255(65.9%) of the mothers had poor practice on ENC.

For cord care practices, 215(55.6%) of the mothers apply substance on the cord and only 31(14.4%) of the mothers applied the drug on the cord that ordered by health professionals. Regarding to thermal care of baby, 274(70.8%) of the respondents were practice skin to skin contact and 215(55.6%) of the mothers gave bathing after 24 hours.

Breastfeeding within one hour was carried out by 209 (54%) and 281 (72.5%) of the mothers gave colostrum for their newborn. As far as immunization was concerned, 297(76.7%) of the respondents started immunization immediately after birth.

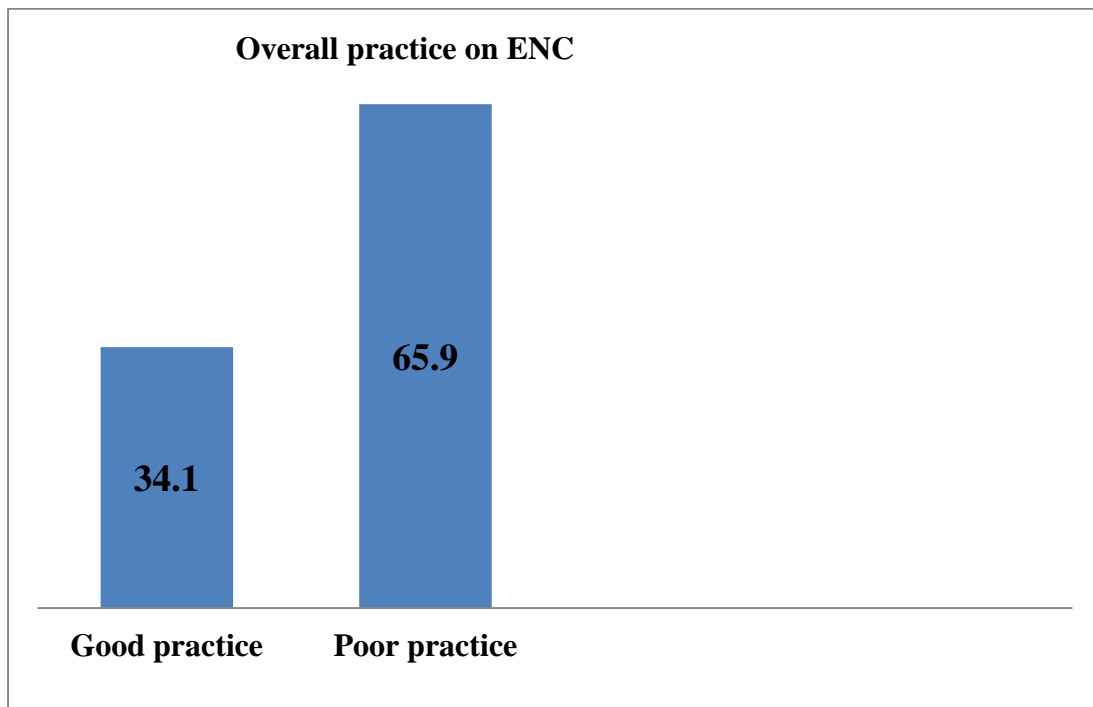


Fig 4.Over all essential newborn care practice among mothers in East Badewacho woreda, Hadiya zone, southern Ethiopia, 2018.

Table: 5. Practice of the mother on ENC in east Badewacho woreda Hadiya Zone, Southern, Ethiopia 2018(n=387)

Practice question	Response	Frequency	%
Instrument used to cut the cord at home	New blade	50	98
	Old blade	1	0.2
Instrument boiled before cutting of the cord at home	Yes	46	90.2
	No	5	0.8
Materials used to tie the cord at home	New &boiled thread	41	80.4
	Old &Unboiled thread	10	19.6
Washing of hands before handling of the baby at home	Yes	27	52.9
	No	24	47.1
Apply substance on the stump after the cord cut	Yes	215	55.6
	No	172	44.4
Substances applied on the stump of the cord after cut	Chlorohexidine	31	14.4
	Butter	165	76.7
	Vaseline	18	8.3
putting of babies on the abdomen to encourage skin to skin contact	Yes	274	70.8
	No	113	29.2
Covering of babies with cloth to encourage thermal care	Yes	338	87.3
	No	49	12.7
Time of first bath given for newborn	Immediately	70	18
	Within 24 hr	102	26.4
	After 24 hr	215	55.6
Time of initiation of breast feeding	Within 1 hr	209	54
	After 1hr	178	46
Giving of colostrum	Feed the baby	281	72.6
	Threw away	106	27.4

What you feed the baby on first	breast milk	343	88.8
	Artificial milk	25	6.4
	Others*	19	4.8
Started immunization	Yes	297	76.7
	No	90	23.3
If the newborn has any manifestation of illness what did you do	Take to health institution	284	73.4
	Give home Rx	89	23
	Take to traditional healer	10	2.6
	Do nothing	4	1

*cow's milk, sugar with water, breast milk from other women

5.5 Factors associated with knowledge of essential newborn care

In bivariate logistic regression Age of the child, Educational status of the mother, Educational status of the husband, Occupation, Husband occupation, Monthly income, ever heard about ENC, ANC follow up, PNC follow up, Counselling about ENC during ANC, Counselling about ENC during PNC and Place of delivery were selected as candidate variables for multivariate logistic regression analysis.

Table 6:-factors associated with knowledge of ENC on bivariate logistic regression in East Badewacho woreda, Hadiya Zone, Southern, Ethiopia 2018

Variables	Categories	Knowledge		COR at 95% CI	P-value
		Good (%)	Poor (%)		
Age of the child	<3 months	70(57.4)	52(42.6)	0.727(.469,1.129)	0.156*
	>= 3 months	172(64.9)	93(35.1)	1	
Educational status of mother	Not educated	24(37.5)	40(62.5)	0.548(0.275,1.101)	0.091*
	Primary	48(31.2)	106(68.8)	0.414(0.23,0.746)	0.003*
	Secondary	38(37.3)	64(62.7)	0.542(0.291,1.014)	0.055*
	Diploma &above	35(52.2)	32(47.8)	1	

Husband educational status	Not educated	7(24.1)	22(75.9)	0.393(0.156,0.993)	0.048*
	Primary	28(28)	72(72)	0.48(0.271,.851)	0.012*
	Secondary	59(41)	85(59)	0.857(0.522,1.409)	0.544
	Diploma & above	51(44.7)	63(55.3)	1	
Occupation	Gov't employe	34(65.4)	18(34.6)	1	
	House wife	87(34.4)	166(65.6)	0.251(0.11,0.558)	0.001*
	Merchant	18(33.3)	38(66.7)	0.165(0.052,0.525)	0.001*
	Farmer	5(23.8)	16(76.2)	0.279(0.149,0.523)	0.002*
	Other	1(16.7)	5(83.3)	0.105(0.011,0.977)	0.048*
Husband occupation	Gov't employe	49(50.5)	48(49.5)	1	
	Farmer	49(32.5)	102(67.5)	0.47(0.279,0.795)	0.022*
	Merchant	44(35.2)	81(64.8)	0.532(0.31,0.914)	0.005*
	Other	3(21.4)	11(78.6)	0.267(0.07,1.017)	0.053*
Monthly income	<1000	24(31.6)	52(68.4)	0.418(0.208,0.84)	0.014*
	1000-4000	89(35.6)	161(64.4)	0.501(0.285,0.882)	0.017*
	>4000	32(52.5)	29(47.5)	1	
Ever heard about ENC	Yes	93(59.2)	64(40.8)	4.974(3.192,7.751)	0.001*
	No	52(22.6)	178(77.4)	1	
ANC follow up	Yes	140(44.5)	176(55.7)	10.5(4.119, 26.75)	0.001*
	No	5(7)	66(93)	1	
Counselling during ANC	Yes	75(57.7)	55(42.3)	3.64(2.338,5.675)	0.001*
	No	70(27.2)	187(72.8)	1	
PNC follow up	Yes	76(50)	76(50)	2.4(1.57,3.67)	0.001*
	No	69(29.4)	166(70.6)	1	
Counselling during PNC	Yes	56(47.5)	62(52.5)	1.827(1.175,2.841)	0.007*
	No	89(33.1)	180(66.9)	1	
Place of delivery	Health institution	132(39.3)	204(60.7)	1.89(0.971,3.68)	0.061*
	Home	13(25.5)	38(74.5)	1	

***Candidate variables in bivariate logistic regression**

In multivariate logistic regression ever heard about ENC, ANC follow up and PNC follow show statistically significant association with knowledge of the mother on essential newborn care.

Ever heard about ENC has significant predictors for knowledge of ENC. Those mothers who heard about ENC were four times more likely to be knowledgeable as compared to mothers who had not heard about ENC[AOR at 95% CI, 4.375(2.708, 7.07)].

ANC follow up was found to have statistically significant associations with knowledge of ENC. Those mothers who had ANC visit were 7.7 times more likely knowledgeable on ENC when compared with mothers who had not follow ANC during pregnancy [AOR at 95% CI, 7.79(1.053,20.782)].

PNC follow up was significant relationship with knowledge of ENC. Those mothers who had follow PNC were 71% more likely knowledgeable on ENC as compared to mothers who had not follow PNC after delivery [AOR at 95% CI, 1.711(1.053, 2.782)].

Table 7.factor associated with knowledge of ENC on multivariate logistic regression in East Badewacho woreda, Hadiya Zone, Southern, Ethiopia 2018

Variables	Categories	Knowledge		COR at 95%CI	AOR at 95% CI
		Good (%)	Poor (%)		
Ever heard about ENC	Yes	93(59.2)	64(40.8)	4.974(3.192,7.751)	4.375(2.708,7.07) a
	No	52(22.6)	178(77.4)	1	
ANC follow up	Yes	140(44.5)	176(55.7)	10.5(4.119, 26.75)	7.79(1.053,20.782) a
	No	5(7)	66(93)	1	
PNC follow up	Yes	76(50)	76(50)	2.4(1.57,3.67)	1.711(1.053,2.782) b
	No	69(29.4)	166(70.6)	1	

Key: 1=reference, a, b=significant, p<0.05; a=0.001, b=0.03

5.6. Factors associated with practice of essential newborn care

In bivariate logistic regression, Educational status of the mother, Educational status of the husband, Husband occupation, ever heard about ENC, Counselling during ANC, Place of delivery and knowledge on ENC were selected as candidate variables for multivariate logistic regression.

Table:-8. Bivariate logistic regression for factors associated with practice of essential newborn care in East Badewacho woreda, Hadiya Zone, Southern, Ethiopia 2018

Variables	Categories	Practice		OR	p-value
		Good (%)	Poor (%)	COR at 95% CI	
Educational status of mother	Non educated	28(43.8)	36(56.2)	1.226(0.611,2.462)	0.561
	Primary	51(33.1)	103(66.9)	0.781(0.431,1.416)	0.415
	Secondary	27(26.5)	75(73.5)	0.568(0.294,1.098)	0.092*
	Diploma & above	26(38.8)	41(61.2)	1	
Educational status of husband	Non educated	14(48.3)	15(51.7)	1	
	Primary	30(30)	70(70)	0.45(0.197,1.069)	0.07*
	Secondary	38(26.4)	106(73.6)	0.384(0.17,0.87)	0.022*
	Diploma & above	50(43.9)	64(56.1)	0.837(0.37,1.895)	0.67
Husband occupation	Gov't employe	40(41.2)	57(58.8)	1	
	Merchant	41(32.8)	84(67.2)	0.696(0.401,1.2)	0.196*
	Farmer	49(32.5)	102(67.5)	0.685(0.403,1.16)	0.16*
	Other	2(14.3)	12(85.7)	0.238(0.05,1.12)	0.069*
Counselling during ANC	Yes	51(39.2)	79(60.8)	1.403(0.904,2.177)	0.131*
	No	81(38.5)	176(68.5)	1	
Ever heard about ENC	Yes	60(38.2)	97(61.8)	1.357(0.887,2.078)	0.16*
	No	72(31.3)	158(68.7)	1	
Place of delivery	Health institution	86(25.6)	250(74.4)	0.037(0.019,0.113)	0.001*
	Home	46(90.2)	5(9.8)	1	
Knowledge on ENC	Good	57(39.3)	88(60.7)	1.442(0.938,2.218)	0.095*
	Poor	75(31)	167(69)	1	

In multivariate logistic regression educational status of the husband, place of delivery and knowledge of the mother on ENC were significantly associated with practice of ENC.

Educational status of the husband has significant predictors for practice of ENC. Husbands who complete primary levels were 86% more likely support mother's practice about ENC compared with husbands educational level of not educated [AOR at 95% CI, 0.24(0.089, 0.64)], also husbands who complete secondary level were 68.6% more likely support mother's practice about ENC when compared with husbands educational level of not educated [AOR at 95% CI, 0.314(0.126, 0.78)].

Place of delivery was significant relationship with practice of ENC. Mothers who gave birth at health institution were 97.6% more likely practice ENC compared to mothers who had gave birth at home [AOR at 95% CI, 0.024(0.009, 0.068)].

Mother's knowledge on ENC was significantly associated with practice of ENC. Mothers who had good knowledge on ENC were two times more likely practice ENC when compared with mothers who had poor knowledge on ENC [AOR at 95% CI, 2.03(1.223, 3.371)].

Table-9: factors associated with practice of ENC on multivariate logistic regression in East Badewacho woreda, Hadiya Zone, Southern, Ethiopia 2018

Variable	Categories	Practice of ENC		COR at 95% CI	AOR at 95% CI
		Good	Poor		
Educational of status husband	Non educated	14(48.3)	15(51.7)	1	
	Primary	30(30)	70(70)	0.45(0.197,1.069)	0.24(0.089,0.64) a
	Secondary	38(26.4)	106(73.6)	0.384(0.17,0.87)	0.314(0.126,0.78) b
	Diploma &Above	50(43.9)	64(56.1)	0.837(0.37,1.895)	0.837(0.299,1.8)
Place of delivery	Health institution	87(25.6)	249(74.4)	0.047(0.019,0.113)	0.024(0.009,0.068) c
	Home	45(90.2)	6(9.8)	1	1
Knowledge on ENC	Good	57(39.3)	88(60.7)	1.442(0.938,2.218)	2.03(1.223,3.371) d
	Poor	75(31)	167(69)	1	1

Key: 1=reference, a, b, c, d=significant, p-value<0.05; a=0.005, b=0.013, c=0.001, d=0.001

CHAPTER SIX: DISSCUSION

In this study mothers' knowledge and practice on essential newborn care and associated factors were analysed, the study revealed that 37.5% of the mothers had good knowledge on essential newborn care. This finding is lower than the studies conducted in India (64.6%) (3), Nepal (47.2%) (28), Gamo goffa zone, southern Ethiopia (57.6%) (29) and Gulomekada district, Tigray region of Ethiopia (80.4%) (30). This discrepancy might be due to socio-cultural difference, access to health facility and sample size variation.

The study shown that the prevalence of good ENC practice was 34.1%. This result is higher than studies conducted in Ghana (15.8%), (33), Eastern Uganda (11.7%) (34), Aksum, Ethiopia (26.7%) (17) and East Gojjam, Ethiopia (23.1%) (20). This difference might be due to an increased awareness of maternal health services and great intervention focusing on child health. But lower than the study done in South west Ethiopia (59.5%) (18) and Mandura district, Northwest Ethiopia (40.6%) (35). This disparity might be due to socio-cultural difference between study areas and access to health facility.

In this study, ever heard about ENC had significant relationship with knowledge on essential newborn care. Those mothers who were heard about ENC were four times more likely knowledgeable when compared with mothers who were not heard about ENC. This findings were consistent with study done in two different district of India (3,25). The possible reasons may be mothers who heard about ENC it may be know about importance essential newborn care.

This study revealed that, ANC follow up was significantly associated with knowledge of ENC. Those mothers who had follow ANC were 7.7 times more likely knowledgeable on ENC as compared with mothers who had not follow ANC during pregnancy. This finding was in line with the study done in Kenya (36). Also, in this study PNC follow was significant predictors for knowledge of ENC. Those mothers who had follow PNC were 71% more likely knowledgeable than those mothers who had not follow PNC after delivery. This study finding was consistent with study done in India (42) and South Sudan (44). The possible justification could be mothers who attend ANC and PNC follow up, might have the chance of getting information about the importance of ENC from health care providers.

In this study, educational status of the husband was found as one of significant predictors for practice about ENC. Husbands who complete primary level 86% and secondary level 68.6% were more likely support mother's practice about ENC compared with husband's educational level of not educated. This result was consistent with study conducted in Bangladesh(38). The reason may be educated husband acquire knowledge through their academic life and play a key role in providing information about ENC practice at home.

This finding revealed that, place of delivery were significant relationship with practice of ENC. Mothers who gave birth at health institution were 97.6% more likely practice ENC compared to mothers who had gave birth at home. This finding was in line with study done in Bihar state, India (50) and Uganda (52). The possible justification for this is mothers who gave birth at health institution have counselled about ENC; which increase knowledge of the mother concerning the essential newborn care practice.

This finding shown that mother's knowledge on ENC were significantly associated with practice of ENC. Mothers who had good knowledge on ENC were two times more likely practice ENC compared to mothers who had poor knowledge on ENC. This is in line with studies conducted in Western Uganda(53) and Gulomekada district in Tigray, Ethiopia(30).This might be due to having mothers knowledgeable on ENC makes them more likely to practice essential newborn care .

Strength and limitation of the study

Strength of the study

The strength of this study is community based. which provide information at the grass root level.

The study also covers wide areas of essential newborn care components which are basically practiced by mothers at home.

Limitation of the study

The study is not supplemented by qualitative studies which was very helpful in finding out the details of the problems. Thus, it will help to find a way for improvement in the knowledge and practice of Essential Newborn care.

Since the study was cross –sectional it may not be strong to demonstrate direct cause and effect between outcome and predictors variables.

There could be some recall bias since the data were collected from those mothers who delivery six months preceding the study.

The study was based on report rather than observed knowledge and practices on ENC. Therefore, there may be a risk that mothers may report what was expected of them but their actual practices may be different.

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATION

CONCLUSION

In this study, around one -third of the mothers were good knowledge and practice on essential newborn care.

Among independent variables analysed, ever heard about ENC, ANC follow up and PNC follow up are contributing factors for knowledge of ENC. Husbands' educational level, place of delivery and knowledge on ENC were statistically significant association with practice of mothers on essential newborn care.

There are traditional practices performed in the community which are: application of butter and other substances to the cord, withdrawing of colostrum before initiation of breast feeding and immediate bathing of the newborn after delivery.

RECOMMENDATION

Based on the finding the following recommendations are forwarded:-

- ❖ **For Zonal health office and East Badewacho woreda health office**
- ✓ Provide training on the area of essential newborn care for health care provider and health extension workers
- ✓ Institutions and the stakeholders should promote mainstreaming to ENC to scale up the level of knowledge and practices on ENC in the community.
- ✓ Health offices should promote strong community based behaviour change communication on the awareness of ENC practices using HEWs and local community's resource people as key actors to change the poor ENC knowledge and practices in the community.
- ✓ Health extension workers should promote and give health education about ENC.

❖ **For health facility**

- ✓ ANC follow, Institutional delivery and PNC follow ups are one of the key interventions areas of maternal and neonatal health but ENC advice are not given, so that health care providers should focus and promote the essential newborn care during ANC, time delivery and PNC utilization.

❖ **For researcher**

- ✓ Most of ENC practices are still affected with traditional practices (withdrawing of colostrum, early bathing and application of materials on the newborn cord stump); therefore, qualitative studies which can address the cultural perspectives are further recommended.
- ✓ Further researches should be conducted on areas of essential newborn care to identify more gap

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9. ANNEX I: QUESTIONNAIRE

CONSENT FORM

Hello, my name is _____. I come here just to collect a data for a thesis title named “Mothers’ knowledge and practice on essential newborn care and associated factors in east Badewacho district, Hadiya zone, SNNPR, Ethiopia 2018 .This is going to be carried out by Mr: **Melese Thomas** who is a postgraduate student in Jimma University, faculty of Health Science, school of Nursing and Midwifery.

The objective of the study: To assess knowledge and practice on essential newborn care and associated factors among mothers in East Badewacho district

The benefit of the study: There is no direct benefit of the participant of the study. However the results of this study will help in identifying the obstacles of good knowledge& practices about Essential Newborn Care and contributes on input in considering a convenient programmatic approach to solve the problem. The result of the study will be disseminated to concerned bodies, including to East Badewacho district Health office.

The risk of the study: Participating in this study will not have any risk or harm.

Right of participants: You have full right either to participate or decline participation in this study. You may respond to all the questions or you may not answer to the questions you don’t want and you may end the interview at any time you want. You can ask any questions which is not clear for you.

Confidentiality: Any information forwarded will be kept confidential and names will not be written.

ENGLISH VERSION: QUESTIONNAIRE

PART I: SOCIO DEMGORAPHIC CHARACTER OF THE MOTHER WITH A CHILD LESS THAN SIX MONTH OF THE AGE

NO	QUESTION	REPOSENSE	SKIP
001	Age of the mother	-----	
002	Age of the child	_____	
003	Sex of the child	1. Male 2. Female	
004	Religion	1.protestant 2 .Orthodox 3.Muslim 4.Catholic 5.Other-----	
005	Residency	1.Rural 2 urban	
006	What is your Ethnicity?	1.Hadiya 2.kembata 3.Wolayita 4.Oromo 5.Others.----	
007	What is your educational status?	1.Not educated 2. Primary 3.secondary 4.Diploma and above	

008	What is the Educational status of your husband?	1.Not educated 2. Primary 3.secondary 4.Diploma and above	
009	What is your Marital status?	1.married 3.widowed 2 single 4.divorced	
010	What is your Occupation?	1.goverment employee 2.Merchant 3.farmer 4.housewife 5.Other Specify _____	
011	What is your husband's occupation?	1. Government employee 2.Merchant 3.Farmer 4.Other Specify _____	
012	Your house hold monthly income	-----in ETB	
013	Did you ever heard about ENC during pregnancy	1.yes 2.no	If 'no'skip Q013&014
014	If yes, in which area of newborn care information you were provided on? (More than one answer is possible)	1. Breastfeeding 2. Cord care 3. Thermal care 4.Immunization 5.neonatal danger signs 6. care on low birth weighted newborn 7. Other (specify)	
015	What are source of information, ever heard about ENC?	1. Radio, Television 2. Health professional 3.health extension worker 4.relative and friends 5. Others specify.....	

PART II: OBSTETRIC CHARACTERSTICS.

S NO	QUESTION	RESPONSE	SKIP
016	How many times did you become pregnant?	-----	
017	Number of children born alive	-----	
018	Did you attend antenatal care during this pregnancy?	1.Yes 2.No	If 'No' skip Q18,19&20
019	If 'yes' How many times did you visit ANC when you were pregnant this child?	1 one times 2.two times 3.three times 4.Four times and above	
020	Did you receive any counselling during your recent antenatal period About essential newborn care?	1.Yes 2.No	If 'No'skipQ20
021	If 'yes', in which area of newborn Care do you counselled during ANC follow up? (Multiple answers possible)	1. Cord care 2. Kept the newborn warm. 3. Immunization 4. Breast feeding. 5. Early recognition of illness in newborn 6. Care of low birth weight	
022	Did you receive PNC in last pregnancy?	1.Yes 2.No	If "no" skip Q.022,23&24
023	If 'yes' how many times did you receive PNC in your last pregnancy?	1.<3 times 2.>=3 times	
024	Have you counselled about essential newborn care during PNC	1.Yes 2.No	If 'No'skipQ24
025	If 'yes', in which area of newborn Care you counselled during PNC? (Multiple answers possible)	1. Cord care. 2. Thermal care 3. Immunization. 4. Breast feeding	

		5. Early recognition of neonatal danger signs 6. Care of low birth weight.	
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PART III: KNOWLEDGE ON ESSENTIAL NEWBORN CARE FOR MOTHERS WITH AN INFANT LESS THAN 6 MONTH OLD.

S NO	QUESTION	RESPONSE	SKIP
026	Do you know handling of after umbilical cord?	1. Without dressing 2. With dressing/cover 3. Don't know	
027	If the umbilical stump is soiled with baby's urine or faeces, what did you do	1.clean with pure water 2.clean with any water 3.don't know	
028	After umbilical cord cut, do you know what substance applied to it?	1.Yes 2.No 3.Don't know	If '1' or '3' skip Q028
029	If 'yes' what material is applied on your baby's umbilical stump after it is cut?	1.Medicine given by health facility(CHX) 2. Nothing applied 3.Butter applied 4. Vaseline 5.Animal dung 6. Other (specify)_____	
030	How can you keep your baby warm after delivery?	1.Skin to skin contact 2.Wrapped the baby in a cloth 3. Other (specify).....	
031	When you should to have first bathing for the baby after delivery?	1. immediately after delivery 2. within 24 hour of delivery 3. After 24 hour of delivery 4. I do not know about the exact time for bathing	

032	What should a mother feed her new born baby first?	<ol style="list-style-type: none"> 1. Breast milk/colostrums 2. Breast milk from other woman 3. Formula feeding 4.cow's milk 5.Sugr water 6.Honey 7. Others specify 	
033	How long after birth the newborn should be breast fed?	<ol style="list-style-type: none"> 1.Within one hour 2After one hr of delivery 	
034	What would you do with the first milk (colostrums) that came from your breast?	<ol style="list-style-type: none"> 1.Feed the baby 2.Threw it away 	
035	Do you know about immunization that is given for children?	<ol style="list-style-type: none"> 1.Yes 2. No 	If 'no'Skip 'Q036'
036	If 'yes'what is the advantage of immunization	<ol style="list-style-type: none"> 1.prevent disease 2. don't know 	
037	Do you know about neonatal danger sign?	<ol style="list-style-type: none"> 1. Yes 2. No 	If 'no' skip Q37
038	If yes, could you mention all the danger sign that you know (Multiple answers are possible)	<ol style="list-style-type: none"> 1.Difficult/fast breathing 2.Lethargy/unconsciousness 3.Convulsion 4.Fever 5.hypothermia 6.Poor feeding or unable to suckle 7.Persistent vomiting 8.Diarrhea 9.Yellow Skin color (jaundice) 10. generalized weakness 11. Others specify..... 	

PART-IV: PRACTICE QUESTIONS REGARDING ESSENTIAL NEWBORN CARE FOR MOTHERS WITH AN INFANT LESS THAN 6 MONTH OLD.

039	QUESTION	RESPONSE	SKIP
	Where did you deliver you last child?	1.At health institution 2. At home	Q45
040	If you 'delivery at home' Who assisted or attended to you during delivery?	1.Health profession (Physician, Health officer &Nurse/midwife) 2.HEWs 3. TBA 4.Relative and friend 5. No attendant	
041	If you 'delivery at home' Why did you deliver at home?	1. Preference for home delivery 2. Home delivery is easy and convenient 3. All my previous deliveries were at home 4. Onset of labour before the expected date 5. Lack of transport during labour and Hospital is too far 6. Family members prefer home delivery 7. Fear of hospital precipitate labour 8. Others -----	
042	What instrument was used to cut the cord for recent delivery? (home delivery only)	1.New blade 2.Old blade 3. Household knife 4.Others _	
043	Did the instrument boiled before used? (home delivery only)	1. Yes 2. No 3. Do not know	
044	What was used to tie the cord for	1. New thread	

	recent delivery? (home delivery only)	2. Boiled string or thread 3. Unboiled string 4. Other____	
045	Did the person who handled the baby Assisting with delivery washed hands with soap and water first?	1. Yes 2. No 3. Do not know	
046	Did anybody apply anything on the stump after the cord was cut?	1. Yes 2. No 3. Do not know	If “no” or “I don’t know” skip Q046
047	If ‘yes’ What did you apply on the stump after the cord was cut?	1. Medicine given by Health professional 2. Butter 3. Vaseline 4. Animal dung 5. Others(specify)_____	
048	Was the baby putted in your abdomen immediately after to encourage skin to skin contact?	1. Yes 2. No 3. Do not know	
049	Did the baby covered with cloth before management of placenta	1. Yes 2. No 3. Do not know	
050	What was the condition of the cloth for Wrapping?	1. Clean, dry &used cloth 2. New cloth 3. Other specify____	
051	When did you bath the baby after birth for recent delivery?	1. Immediately after birth 2. Before 24 hours 3. After 24 hours 4. Do not know	

052	Did you give the baby colostrum (the first liquid) that comes from your breast?	<ol style="list-style-type: none"> 1. Yes 2. No 	
053	What did the baby fed on first after delivery?	<ol style="list-style-type: none"> 1. Breast milk 2. Breast milk from other woman 3. Formula feed 4.cow's milk 5.Sugar water 6. Others _____ 	
054	How soon after birth was the baby breastfed?	<ol style="list-style-type: none"> 1. within the first hour after delivery 2. After one hour 3. Do not know 	
055	Did you start immunization?	<ol style="list-style-type: none"> 1. Yes 2. No 	If 'yes' skip Q '056'
056	If 'no' why you did not immunized the baby?	<ol style="list-style-type: none"> 1. Family members did not allow me. 2. Baby was sick 3. Baby was weak 4. Distance to health facility is far 5. Health professionals were not cooperative 6. Lack of necessary logistics in the health facility. 7.Do not know 	
057	If your newborn has any of Manifestations of illness what did you do?	<ol style="list-style-type: none"> 1.Take to Health institution 2.I gave Home treatment 3.Take to Traditional healer 4.Do nothing 5.pray to God 6.Others 	

10. Gudishshi lamma: Hadiyissa daballako Xammichcha

Jimmi yuniverisitee minaadabina fayyaa'ooma egeechchi losa'ni minenne la'mi digiree maassi kitaaba gudisimina wiixa'aakami naqaasha wixxaachina eeyyii'xi sagara uwo manna sidimina gudaakkoo gudusha

Lophphitatto ayyiche;

Summi iiki _Melese Thomas yamaamookko. Ku xammichi siirakko amo'i harechcho qarammu chiluwwa egerimmi ogoranne, ixxenno amaxaamoo luwwanne yookki naqaasha wixaa'imina guudakkoo xammicha. Ebikina. Ka horoori woshane gudiki xaa'micha dabarimine naqaasha uwwito'isina ati dao'llaantaatto.

Ka xamichchuwika hundami ihukko kollo dabacha dabarimami urrimami xansiisohane ihukarrem ati ka xaamichina uwwitoo naqaashi danaami misha ebimina araaqa awwadokane ihookko.


Xammichcha dabarimina itanta?

Eeyya, asheere aa'ee, galaaxxoommo!

Annex lamma: Xammicha: Hadiyigna version

BAXXANCHI MATO: MINAADAPHI HEECHI OGORAA GATI QANQUUWWA

Xigo	Xammicha	Dabachcha	Bikkoo
001	ki ummuri mee'o	-----	
002	ki chilich ummuri mee'o	_____	
003	Qatititii chilichi mashari	1. Goncho 2. Landichote	
004	Ammanatii	1.Chirstiana 2.Orthodoxa 3. Muslima 4.catholica 5. Mullane.....	
005	ki zarri te'im gossa'i marruwwa	1.haddiya 2.kambatta 3. Wolayita 4. Orommo 5. Mullane.....	
006	Kaba hello beyyi	1 gaxxara 2katamma	
007	Losan duhaa'i	1.Horeem losumoyyo 2. matii sorri affebe'e 3. luxxi gabala 4. lammi gabala 5. diploma ehanninsi Hananette	
008	Kii manchii Losan duhaa'i	1.Horemi losumoyyo 2. matii sorri affebe'e 3. luxxi gabala 4. lammi gabala 5. diplommaa ehanninsi Haanannette	
009	Mine issimmi duhaa'i	1. Mine issumoyyo 2. Mine issammo 3. Annani ihaammo	

		4. Manchi lehakko	
010	Baxii	1. Adi’li baxanchotte 2. Dadaranchotte 3. Abullanchotte 4. Mi’n amatte 5. Muleki yolas kure.....	
011	Ki manichi baxxi marruwwa	1. Adi’li baxaancho 2. Dadaraancho 3. Abullancho 4. Muleki yolas kure.....	
012	Mat agananne hinkaanni birr ago	-----ethiopi birr	
013	ka macharashi malayi hongini amanne harechi qarammu chiluwwa egerimmi ogorana sawwite allahinee	1. Oyya  2. A’umoyyo	X13,14
014	‘Oyya’ yititi lassi hinka ambane sawwitee allatenihee(matti lobboka dabarimmi xanamokko)	1.Anuna ichisimane 2.Surro egerimanne 3.Edechcha danamissa edesimmane 4. Katabisimmane. 5. Hareecho qarammu chiluwwi dingatane shoo milkituwwane 6.Amanni affone qarammu chiluwwa egerimmi duhanne 7. Mulle yolas.....	
015	hareecho qarammu chiluwwa egerimmi sawwite mahii machesitto	1.Radionna,Televijinna 2.Xenna balamuyya 3.Xenna extenshina 4. Qari-mannii	

		5. Mullane	
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BAXXANCHI LAMMO: KINIININNE AMAXAAMOO LUWWA

Xigo	XAMMICHACHA	DABACHCHA	BIKOO
016	Me'e korre malaye hogga?	-----	
017	Me'e ossi forri he'aa	-----	
018	ka chilicho qatenna illage/malaye hogitt amane kititila isitahinne	1.Issammo 2.Isumoyyo →	X21
019	'Issammo' yititilas me'e korre issita	1.Matti korre 2.lammi korre 3.sasi korre 4.sorri korre	
020	malayi hongini kitila isito amanne kachali chiluwwa egerimmi ogoranne sogitanno allatenihee	1.A'ammo 2.A'umoyyo →	21
021	'A'ammo' yititilas hinka sawwitene sogitanno allito (matti lobboka dabarimmi xanamokko)	1.Anunna ichisimane 2.Surro egerimanne 3.Edechcha danamissa edesimmane 4. Katabisimmane. 5. Hareecho qarammu chiluwwi dingatane shoo milkituwwane 6.Amanii affone karamu chiluwwa egerimanne 7. Mulleki yolas.....	
022	Chiluwwa qaracka lasage isakammi kititila isitahinne?	1.Issammo 2.Isumoyyo →	25
023	'Issammo' yititilas me'e korre issita	1.<3 korre 2.=>3 korre	
024	Qatta lasage kititila isito amanne kachali chiluwwa egerimmi ogoranne sogitanno allatenihee	1.A'ammo 2.A'umoyyo →	25
025	'A'ammo' yititilas hinka sawwitene sogitanno allito (matti lobboka dabarimmi xanamokko)	1.Anunna ichisimane 2.Surro egerimanne 3.Edechcha danamissa edesimmane	

		4. Chilla Katabisimmane. 5. Hareecho qarammu chiluwwi dingatane shoo milkituwwane 6.Amanii affone karamu chiluwwa egerimanne 7. Mulleki yolas.....	
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BAXXANICHCHI SASO: LACHCHINE AMAXAMMO XAMMICHUWWA

XIGO	XAMMICHA	DABACHCHA	BIKKO
026	Surro murakka lasage maham ambakammi bee'isa lakko	1. La'ommo 2. La'omoyyo	
027	Chiluwwi surri shumine bi'o amane mahine shinshakamokkii	1.muchur wo'inette 2.siddamu wo'inette	
028	Chilluwwi surro murakka lasage maha issakamida lakko	1.La'ommo → X028 2.La'omoyyo	
029	'Lakkohanni' ihulas maha surrone issakamokkii	1. hakim uwwukki qarare 2.Mahami issakamoyyo 3. Burro 4. Vaselina 5.Orra'a 6.Mullane	
030	Qaramma lasage Chiluwwi orachchi ibonna ma'a issakamokki	1.Anuni lambenne qaphimma 2.Muchuri edechchi qaphimma 3. Mullane....	
031	Chilluwwi qaramma lasage me'e ammani lasone orachcho anshakkamokki	1.Qaramukosammi 2 Qaramuki matii balli woronne 3 Matti balli lasone 4. la'ommoyyo	
032	chilli qaramma lasage anuna ichisha me'e amamene asherakamida lakko	1. La'ommo → X 032 2. La'omoyyo	
033	Me'e amanene anuna ichisha asherakamokkii	1. Matti sa'ati woronne 2. Matti sa'ati lasone 4. Qosommoyyo	

034	Luxxe anunii firro axxi bikkina lakko	1.La'ommo 2.La'omoyyo	
035	Chilluwina uwakammi kitibatii bikina lakkone	1.La'ommo 2.La'omoyyo → X36	
036	'Lakkohani' ihulas kitibaxxi awwadii maha	1.chilla jabbi horimma 2. Qosommoyyo	
037	Harrechcho qarammu chilluwane mo'ammo dingatagni milkituwwa lakko	1.La'ommo 2.La'omoyyo → X 38	
038	'Lakkohani' ihulas dingatane mo'ammo milkituwwa kurre.(matti lobbo dabarimmi xanamokko)	1foshsha horrimma 2.orachcho hasisimma 3.gaggo hushisimma 4.orachcho ibbisimma 5.orachchi sigimma 6.anunna ichchimma hogimma 7. uro be'e uwwisimma 8.affusimma 9. ja'undissa/orachchi bichcha ihmima 10.orachchi qachchimma 11. Mulle yolas.....	

BAXANCHCHI SORRO: CHILLUWWINA ISSITO AWWADINNE AMAXAMMO LUWWA

Xigo	XAMMICHCHA	DABACHCHA	BIKKO
039	Ka chilicho hanno qatitto?	1.Xenna taku'ammane → X45 2. minenne	
040	ka chilicho qatto amane qarimmi hidatane ayyi harmukko	1.xenna balamuya'i (doctora, xenna mokonina & Nursa/midwifaa) 2.xenna extenshina 3. bahill balamuyya	

		4.Qarrimanna 5. ayyimmi haramukoyyo	
041	Mine qatatohani ihulas mahina mine qatito	1. mine qareena dolummi bikina 2. mine qarimmi kemmo be'e bikina 3. luxxi osomii mine qarummi bikina 4. xuchchi mine he'onammi asheru bikina 5. xenna taqommi qelli ihubikina 6. mini mani mine qare yubikina 7. xena taqomma qarimma badummi bikina 8. Mullane.....	
042	Surro murimina maha awwaxxakamokki. (mine qaru ammo mo'o xammichcha)	1. Harechi millacha 2. Awwaxako millacha 3. Mine awwaxakami billawwa 4. La'omoyyo 5. Mule yolas.....	
043	Surro murakam mutta ibbal wo'one huffalakahinne? (mine qaru ammo mo'o xammichcha)	1. Oyya 2. la'ummoyyo 3.qosommoyyo	
044	Surro mutakka lasage karimina maha awwaxitakko? (mine qaru ammo mo'o xammichcha)	1. Harrechii kirra 2. Ibbali wo'one huffako kirra 3. Ibbali wo'one huffube kirra 4. Qosommoyo 5. Mullane__	
045	Chilla qaphpho mani qaphena gasa anga sammunine muchur wo'ine ansha'a?	1. Ansha'akko 2. Ansha'ukoyyo	
046	chillika surro muraka lasage mahi isamuda lakko	1. La'ommo 2. La'ommoyyo 3. Qosommoyyo } → X047	

047	Issakolas maha issamukko	1. Burro 2. Vaselinaa 3. Orra 4. Mule yolas	
048	Chilli qaramukisam ati qaphitona uwwakka	1.Uwwamakko 2.Uwwamukoyyo 3. Qosommoyyo	
049	chilli qaramma lasage orachchi ibonna eddechi xaxakka/ ammadaka	1.Oyya 2.Ammadakoyyo 3. Qosommoyyo	
050	chilli qaramma lasage qaphimmina awwaxxako eddechi hinkide	1. muchurri awwaxako eddechi 2.harechi edechcha 3. Mule yolas....	
051	Chilli qaramma lasage me'e ammani lasone oracho anshakokii	1. Qaramukisammi 2. '24'saat woronne 3.'24'saat lasone 4 Qosommoyyo	
052	Chillina qaramma lasage luxxeka anuni firuki addo uwwita	1. uwammo 2. uwwumoyo 3. Qosommoyyo	
053	Chilli qaramma lasage luxekka maha uwwitokki	1. ii anuni firuki ado 2. mulli amo'i anuna ichukoki 3. artifishalli ado uwwimma 4.lalewwi ado uwwimma 5.sukari wo'o uwwimma 6.marabo uwwimma 7. Mule yolas....	
054	Me'e amanni laso anuna ichisa ashetito	1. matti saati worone 2. matti saati lasone 3. Qosommoyyo	
055	Chilli kitibatta asherraa	1. oyya 2. Asherukoyyo	X 056
056	Asherubelas mahina asherukoyyo	1. Mi'n maani fakadukoyyo. 2. chilli jabbo bikina 3. chilli hoggo bikina	

		<p>4. Xenna taquami kelli ihubikina</p> <p>5. Xenna balamuyya uwwena fakadagnayoo</p> <p>6. Kitibat qarari bee'e.</p> <p>7.Qosommoyo</p>	
057	Chilli jabbo ayyamo hanno masito te'im maha issito	<p>1.xenna taquama masommo</p> <p>2.mine qarari uwwommo</p> <p>3.bahil hakimmuw beyyo masommo</p> <p>4.maham issommoyo</p> <p>5.utissommo</p> <p>6. Mule yolas.....</p>	

ASSURANCE OF PRINCIPAL INVESTIGATOR

The undersigned, declare that this thesis my original work, has not been presented for degree in this or any other university and that all sources of materials used for the thesis has been fully acknowledged.

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Date. _____ Signature _____

APPROVAL OF THE FIRST ADVISOR

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APPROVAL OF THE SECOND ADVISOR

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