Research Article

Assessing essential new born care practice and associated factors in mothers who gave birth within the last 6 months in east badewacho woreda, hadiyya zone, Ethiopia

Abstract

Background: Every year, more than 2.7 million new-borns die before reaching neonatal age in the world, with the majority of these deaths occurring at home. Surprisingly, half of these occur within the first 24 hours of delivery, and 75% occur in the early neonatal period. One low-cost approach to improving new-born baby health outcomes is to promote essential new-born care practices.

Objective: Thus, the purpose of this study was to evaluate essential new-born care practices and associated factors among mothers who gave birth within the last 6 months in East Badewacho woreda, Hadiyya zone.

Methods: From March 1 to April 30, 2018, a community-based cross-sectional study was designed. The sampled population consisted of 399 mothers who had live births within the previous six months, as determined by a multistage random sampling technique. The data was collected using a semi-structured questionnaire and entered into Epi-data version 3.1 before being exported to SPSS version 21 for analysis. A binary logistic regression analysis with a 95% confidence interval was performed.

Results: Less than half of the mothers (34.1 %) practice essential new-born care. The husband's educational status [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 of essential new-born care [AOR=2.03, CI (1.223,3.371)] were significant predictors of essential new-born care practice.

Conclusion: The study's findings revealed that essential new-born care was not widely practiced in East Badewacho Woreda. As a result, strengthen the link between health centers and health posts in order to increase ANC, institutional delivery, and PNC service utilization.

Keywords: essential, Ethiopia, knowledge, new-born care, practice

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Abbreviation:
ENC, essential new-born care; NMR, neonatal mortality rate

Introduction

Essential new born is a set of recommendations designed to improve the health of new-borns through interventions before conception, during pregnancy, at and shortly after birth, and in the postnatal period. Thermoregulation, clean delivery and cord care, breastfeeding initiation, immunization, eye care, recognizing danger signs, caring for preterm or low birth weight infants, and managing new-born illnesses are all part of it.[1,2]

Neonatal mortality is one of the world's most neglected health issues. It is estimated that 2.7 million neonates worldwide die before reaching the age of one month, with low and middle-income countries accounting for 98 percent of these neonatal deaths. The majority of neonatal deaths are preventable, regardless of whether the birth took place at home or in a health care facility, or whether a skilled attendant was present at the time of birth. Unsanitary cord care, Neonatal hypothermia (early bathing), a lack of early breastfeeding, and a failure to identify and refer sick neonates are all major causes of neonatal mortality.[3–5] With 32 deaths per 1,000 live births, Africa continues to have the highest neonatal mortality rate (NMR), accounting for 38% of the global NMR and 30% of the continental burden of under-five mortality.[6]

In Ethiopia, approximately 87,000 new-borns die during their first month of life each year. More than half of all neonatal deaths occur within the first 24 hours of life, and nearly three-quarters occur within the first weeks of life, with the majority of neonatal deaths occurring at home. In a 2016 national report, NMRs in Ethiopia were estimated to be 29 per 1000 live births. Furthermore, the Southern Nation Nationalities and Peoples Regions (SNNPR) NMRs were estimated to be 35 per 1000 live births, which is slightly higher than the national report.[7,8]

Several factors have been identified as barriers to new-born care access, particularly in developing countries, including service availability, an insufficient 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 new-born care, maternal health, and socio-demographic characteristics.[9] According to evidence from various studies conducted in Ethiopia, mothers use the ENC infrequently. This demonstrates the importance of traditional community home care practices in new-born care.[10–14]

According to a Hadiya zone health office report, neonatal mortality was estimated to be 23 per 1000 live births. An assessment of practice on essential new-born care was one of the key prerequisite information required in designing a strategy to improve new-born health outcomes and eliminate preventable causes of neonatal morbidity and mortality.

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Furthermore, mothers' use of essential new born care is critical for promoting essential new born care and lowering neonatal mortality. As a result, the goal of this study was to assess mothers' practice of essential new-born care and the factors that influence it in East Badewacho Woreda, Hadiyya Zone, South Ethiopia.

Material and methods

Study design and setting

A community-based cross-sectional study was conducted among mothers with infants under six months old in East Badewacho woreda, Hadiya zone, Southern Ethiopia, from March 1 to April 30, 2018. East Badewacho woreda is 342 kilometres south of Addis Abeba, 121 kilometres east of Hawassa, and 97 kilometres east of Hosanna, the Zonal capital. According to the woreda health office report, the total population in the woreda was 175,660, with 2130 (1.23 percent) of the mothers having children under the age of six months.

Sample size determination and sampling technique

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= [(242x0.1) +242) x1.5)] =399 (**Table 1).

Table 1 Sample size determination for outcome variables and associated factors.[15]

	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	

A multi-stage sampling technique was used to select the study population. Initially, the woreda is divided into rural and urban kebeles. The woreda of East Badewacho is divided into 33 rural and 3 urban Kebeles. The lottery method was used to select 10 Rural and 2 Urban Kebeles from among those who applied. The number of mothers with infants under six months old is estimated to be 2130, according to data obtained from the East Badewacho woreda health office. In the last six months, 793 mothers gave birth in selected Kebeles.

Mothers who had given birth in the previous six (6) months, from August 28, 2017 to February 28, 2018, were selected from the family registration folders of each selected Kebeles health post and coded prior to data collection to create a sampling frame. The sample size was determined by dividing the number of Kebeles by the number of Kebeles. To select study participants from coded mothers once proportionate to size allocation, simple random sampling was used. Again, HEWs and leaders were given a list of mothers ticked by name and address from each health post's registered mothers. Mothers with infants under six months old have their names and addresses specified, and locations are determined in collaboration with the Kebele's HEWs and leaders. Mothers with children under the age of six months who had been identified were interviewed in their homes. Non-respondents were selected study participants who refused to participate in this study.

Data collection instrument

The semi-structured questionnaire was adapted from a national report published in 2016 and previous research.[7,15, 16] It includes information on socio-demographic characteristics (15 questions), obstetric characteristics (10 questions), and mothers' use of ENC (19 question). Finally, the questions about ENC knowledge and utilization were classified as good or poor based on operational definition.

Data collection procedure

The data was collected from selected Kebeles between March 1 and March 30, 2018. It was gathered through face-to-face interviews with mothers using a hadiyisa language version instrument from all selected Kebeles. A respondent who was unavailable at the time of data collection was contacted again. For supervision, two BSc nurses were hired, and six diploma nurses were hired for data collection.

Data processing and analysis

The collected data was manually checked for completeness and consistency before being entered. Before being exported to SPSS version 21, the data was coded, cleaned, and entered into Epi-data version 3.1. Descriptive analysis, such as statements, tables, charts, and graphs, were used to present the results of the data analysis. We used the binary logistic regression method. Bivariate and multivariate logistic regression models were used to identify factors associated with ENC utilization. In order to identify factors associated with the utilization of essential new-born care, variables with a P-value of 0.25 in bivariate logistic regression were entered into a multivariate logistic regression model. The OR at the 95 % confidence interval was used to calculate the statistical association between the various independent variables and the dependent variables. P-values of

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0.05 were considered statistically significant in multivariate logistic regression. The fitness model passed the Hosmer and Lemeshow statistics test with a p-value of 0.824.

Data quality management

To ensure consistency, the previously prepared semi-structured questionnaire in English was translated into the local language hadiyisa and then retranslated back into English. The pre-test was conducted on 5% of the sample size outside of the study area in west Badewacho woreda, which is 18 kilometres from the study areas. Corrections were made to the question sequences, grammar, and spelling errors. The internal reliability of the questions pertaining to socio-demographic characteristics was 0.87, Obstetric characteristics were 0.75, and ENC practices were 0.8, as determined by the Cronbach's test.

The interview was conducted by six diploma nurses. Two supervisors with first-year nursing degrees were tasked with supervising the data collection process, which included assisting data collectors, checking completed questionnaires daily for completeness, and providing feedback to data collectors. Data collectors and supervisors were chosen based on their ability to communicate in hadiyisa, the local language, and prior data collection experience. One day of training was provided for data collectors and supervisors on the study's objective, relevance, information confidentiality, and interview techniques. Supervisors would supervise and check on their respective data collectors during data collection. Every questionnaire was cross-checked on a daily basis by the supervisors and principal investigators. Problems encountered during data collection were discussed with data collectors and supervisors throughout the night.

Ethical considerations

Jimma University's institute of Health faculty health science's institutional Review Board granted ethical approval (IRB). The East Badewacho woreda health office received an official letter from the School of Nursing and Midwifery. Similarly, after being explained the purpose of the study, each study participant verbally consented. All responses were kept strictly confidential.

Results

Socio demographic characteristics of respondent

The study included 387 mothers, with a response rate of 97%t. As a result, 387 people were included in the analysis. Women's ages range from 18 to 39, with a mean of 26.85. (5.42). The majority of those polled (51.4%) were between the ages of 25 and 34. Thirty-seventy-three percent (96.4%) of those polled were married. In terms of educational attainment, 164 (42.5%) of the mothers had finished primary school, while 144 (37.2%) of the husbands had finished secondary school. Regarding religion and ethnicity, 292 (75.5%) of respondents were protestant, while 291 (75.2%) were Hadiya. In terms of occupation, 252 mothers (65.1 percent) were housewives (Table 2).

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

Variables Categories		Frequency	Percent
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

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Source of information

157 (40.6 %) of the mothers who responded had heard of ENC. 90 (57.3%) of the mothers had heard about breast feeding from a health professional, and 151 (96.2%) had heard about it from a friend or family member (Table 3).

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

Obstetric characteristics of respondent

316 (81.7%) of the total respondents attended ANC follow-up during their previous pregnancy, and 249 (78.8%) followed up four times or more. During ANC, only 130 (41.1%) of the mothers were counselled about ENC, while 118 (90.7%) of the mothers were counselled about breast feeding. Three hundred thirty-six (86.4%) of study participants gave birth in a health facility, while only 152 (39.3%) attended PNC follow up and 132 (86.8%) followed up once. During the 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).

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
	4-Feb	153	39.5
	>=4	107	27.7
Number of child born alive	<2	124	32
	4-Feb	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

Variables	Categories	Frequency	Percent
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

Practice of essential new-born care

132 (34.1%) of the mothers in the study use ENC, while 255 (65.9%) do not (Figure 1). In terms of cord care practices, 215 (55.6%) of mothers apply substance to the cord, whereas only 31 (14.4%) apply drug to the cord as prescribed by a health professional. Skin-to-skin contact was used by 274 (70.8%) of respondents for baby thermal care, and 215 (55.6%) of mothers bathed their babies after 24 hours. Two hundred and nine (54%) of the mothers breastfed their new-born s within one hour, and 281 (72.5%) of the mothers gave their new-born colostrum. In terms of immunization, 297 (76.7%) of respondents started immunization as soon as they were born (Table 5).
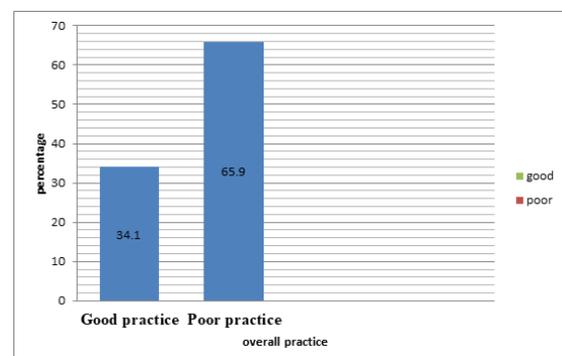
Figure 1 Over all essential new-born care practice among mothers in East Badewacho woreda, Hadiya zone, southern Ethiopia, 2018.

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Table 5 Practice of 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 new-born	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 new-born 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

Factors associated with practice of essential new-born care

The husband's educational status, place of delivery, and mother's knowledge of ENC were all significantly associated with ENC utilization in multivariate logistic regression. The educational status of the husband is a significant predictor of ENC practice. Husbands who finished primary levels were 86% more likely to support ENC practice than husbands who did not finish primary levels [AOR at 95% CI, 0.24(0.089, 0.64)], and husbands who finished secondary levels were 68.6 percent more likely to support ENC practice than husbands who did not finish secondary levels [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 to use ENC than mothers who gave birth at home [AOR at 95 % CI,0.024(0.009,0.068)].

Mother's knowledge of ENC was significantly associated with ENC practice. Mothers with good ENC knowledge were twice as likely to practice ENC as mothers with poor ENC knowledge [AOR at 95 % CI, 2.03(1.223, 3.371)] (Table 6)**.**

Discussion

This study looked at essential new-born care practices and the factors that influence them. According to the study's findings, 34.1% of people use ENCs. This result is higher than that of studies conducted in Ghana (15.8%), Eastern Uganda (17.8%), and South Sudan (17.8%) (11.7 %),[16] Eastern Uganda (11.7%),[17] Aksum, Ethiopia (26.7%),[10] and East Gojjam, Ethiopia (23.1%)[13]. This disparity could be attributed to increased maternal health service awareness and significant intervention focusing on child health. However, this figure is lower than that of the studies conducted in South West Ethiopia (59.5 %)[11] and Northwest Ethiopia Mandura district (40.6 %).[18] This disparity could be explained by socio-cultural differences in study areas as well as access to health care facilities.

In this study, husbands who completed the primary level 86 % of the time and the secondary level 68.6 % of the time were more likely to support ENC practice than husbands who were not educated. This result was consistent with the findings of a study conducted in Bangladesh.[19] The reason for this could be that educated husbands gain knowledge through their academic lives and play an important role in providing information about ENC practice at home.

According to the findings of this study, mothers who gave birth at a health facility were 97.6 percent more likely to practice ENC than mothers who gave birth at home. This finding was consistent with research conducted in India [21] and Uganda.[21] This could be because mothers who gave birth at a health facility were counselled about ENC, which increased the mother's knowledge of the essential new-born care practice.

The study found that mothers with good ENC knowledge were twice as likely to practice ENC as mothers with poor ENC knowledge. Studies conducted in Western Uganda[22] and Ethiopia[15] corroborated this finding. This could be because mothers who are knowledgeable about ENC are more likely to use essential new-born care.

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Table 6 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)	I	
	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(0.019,0113)	0.024(0.009,0.068)**c**
	Home	45(90.2)	6(9.8)	I	I
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)	I	I

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

Conclusion

The study's findings revealed that essential new-born care was not widely practiced in East Badewacho Woreda. Husbands' educational level, place of delivery, and knowledge of ENC all had a statistically significant relationship with mothers' use of essential new-born care. To change the low ENC utilization in the study area, promote strong community-based behavior change communication on the importance of ENC utilization. Additionally, strengthen the link between health centers and health posts in order to increase ANC, institutional delivery, and PNC service utilization.

Acknowledgments

Conflicts of interest

The authors declare that they have no competing interests.

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