

Essential Newborn Care Practices and Associated Factors Among Mothers Who Attended Postnatal Care at Public Health Facilities in Boset District, Ethiopia

Hailu Dagne¹, Hunde Lemi¹, Haji Aman¹, Tilaye Gebru^{2,*}

¹Department of Public Health, Adama Hospital Medical College (AHMC), Adama, Ethiopia

²School of Nursing and Midwifery, College of Health Science, Haramaya University, Haramaya, Ethiopia

Email address:

hailudagne98@gmail.com (H. Dagne), hundelemei@gmail.com (H. Lemi), hajia.ama9@gmail.com (H. Aman),
tilayegebru166@gmail.com (T. Gebru)

*Corresponding author

To cite this article:

Hailu Dagne, Hunde Lemi, Haji Aman, Tilaye Gebru. Essential Newborn Care Practices and Associated Factors Among Mothers Who Attended Postnatal Care at Public Health Facilities in Boset District, Ethiopia. *American Journal of Nursing and Health Sciences*. Vol. 2, No. 3, 2021, pp. 79-86. doi: 10.11648/j.ajnhs.20210203.13

Received: July 30, 2021; Accepted: August 24, 2021; Published: August 31, 2021

Abstract: Background: Essential newborn care is a set of comprehensive care designed to improve the health of newborns through intervention soon after birth and in the postnatal period. The World Health Organization in 2018 reported that globally every year 2.5 million neonates die during the neonatal period and 75% of the deaths occur during the first week in the neonatal period. The Lack of appropriate essential newborn care practices by the primary caregiver immediately after birth and in the postnatal period is important in determining neonatal mortality and morbidity rates. Objective: To assess essential newborn care practices and associated factors among postnatal mothers at public health facilities in Bosset District, Oromia Regional State, Ethiopia, 2021. Methods: An Institutional-based cross-sectional study was conducted from January 1 to February 20/2021 among 411 mothers who attended postnatal care at randomly selected public health facilities in the Bosset district. A Systematic sampling technique was used to select the study participants. Data were collected using a researcher-administered semi-structured questionnaire and an observation checklist. The Collected data were checked manually for completion cleaned and stored for consistency and entered into Epi info version 7.1 software then exported to the statistical package for social sciences (SPSS) version 21 software for analysis. Descriptive analysis was done to describe the study population using frequency, mean, standard deviation, and percentages. Bivariate logistic regression was used to determine the association between the independent and outcome variables. The strength of the association between the variables was described using AOR with a 95% Confidence interval. Statistical significance was declared at p-value<0.05. Result: The magnitude of essential newborn care practices was 62.8% (95%CI: 58.02-67.35). Birth attendant (AOR: 25.29; 95%CI: 2.98-215), mode of delivery (AOR: 2.84; 95%CI: 1.51-5.34), overall knowledge (AOR: 21.3; 95%CI: 10.21-44.3), and mothers' attitude toward essential newborn care (AOR: 3.46; 95%CI: 1.42-8.46) were found to have a significant association with essential newborn care practices. Conclusion and recommendation: In this study, the level of essential newborn care practice was relatively higher than the study results in Oromia Regional State. To increase essential newborn care practice is the provision of counseling mothers, creating awareness, changing the attitude of mothers, and attending delivery by a skilled birth attendant to all pregnant women were recommended.

Keywords: Essential Newborn Care Practice, Newborn, Postnatal Mothers

1. Introduction

Essential newborn care is a set of comprehensive recommendations designed by the World Health Organization (WHO) to improve the health of newborns through

intervention soon after birth and in the postnatal period. It includes thermoregulation, clean delivery, cord care, initiation of breastfeeding, and, recognition of danger signs [1]. Global evaluations confirm that a commitment to improving newborn health makes meaningful socio-

economic contributions [2]. Essential newborn care is of immense importance for the survival and proper development and healthy life of a baby [3].

Clean cord care, drying and wrapping the newborn immediately after delivery, delaying the newborn's first bath for at least twenty-four hours or several days to reduce hypothermia risk, and initiating breastfeeding within the first hour of birth have all been identified as essential practices for reducing newborn morbidity and mortality. Globally, 52 percent of neonatal deaths are caused by a lack of appropriate neonatal care, and the majority of those deaths could be avoided with low-cost interventions such as quality care at birth and improved newborn care practices. [4, 5]. The sustainable developmental goal (SDG) target for child mortality represents a renewed commitment to the world's children by 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 deaths per 1,000 live births and under-five mortality to at least as low as 25 deaths per 1,000 live births. The first 28 days of a child's life are the most dangerous for survival, with an average global rate of 18 deaths per 1000 live births (LBs) in 2017. [6].

Ethiopia reported making little or no progress toward the child survival target, which is heavily influenced by neonatal mortality. The neonatal mortality rate (NMR) and postneonatal mortality rate (PNMR) were 29 and 19 deaths per 1000 LBs, respectively, with early neonatal deaths accounting for 79% and late neonatal deaths accounting for 21%. [7]. The health of the newborn has been neglected despite the huge number of deaths due to various reasons such as the mother's inability to seek skilled care during delivery, the bathing baby immediately after delivery, improper cord care, delaying immediate contact between mother and newborn, and the fact that most neonatal deaths are unseen and undocumented [8]. According to the WHO 2015 report globally every year, 2.7 million neonates die during the neonatal period which constitutes 45% of under-5 mortality and approximately 58% of infant mortality and 75% of the deaths occur during the first week in the neonatal period [5, 9]. Most neonatal deaths occur in low and middle-income countries, which account for a growing proportion of all under-five mortalities [10]. If the trend continues with the share of neonatal deaths to under-five deaths is projected to increase from 45% in 2015 to 52% in 2030 [11]. Each year, approximately 300,000 African babies die on the day of their birth, mostly due to inadequate maternal and newborn care [12]. More than 90% of neonatal deaths occur in sub-Saharan Africa 27 deaths per 1000 LBs in 2017, and about half of the deaths occur at home [13]. The risk of neonatal death is highest in Africa, with 41 neonatal deaths per 1000 live births, primarily in the Sub-Saharan regions of Western, Middle, and Eastern Africa, which have between 42 and 49 neonatal deaths per 1000 live births, whereas Southern and Northern Africa have lower rates. Early neonatal deaths (death within the first week of life) are frequently obstetric in nature and are the result of inadequate care. [14].

Ethiopia, with an estimated 122,000 newborn deaths per year, is one of the ten countries with the highest number of neonatal deaths worldwide [15]. Newborn health and survival depend on the care given to the newborn, although newborn care is a very essential element in reducing child mortality, it often receives less than optimum attention [1]. This fact may indicate the magnitude of neonatal deaths where neonates lack appropriate essential newborn care. Neonatal survival is affected by the lack of adequate primary care and strong cultural attitudes. Important neonatal death and morbidity rates are determined by essential neonatal care procedures immediately after birth. [16].

Many neonatal fatalities can be avoided by proven and economic measures. Home Basic Neighborhood Care (HBENC) packages target the primary causes of neonates, reducing the death rate of neonates by 70% successfully. The care of the children had always traditionally been the forte of mothers irrespective of education, income, and social class differences. Village health workers deliver HBENC (maternal and child health care provided by health extension workers at the home level) to vulnerable families at the community level, effectively reaching families that lack access to medical facilities [17, 18]. In Ethiopia, neonatal mortality contributes significantly to under-five child mortality making the achievement of SDGs difficult and hence the need to invest in addressing neonatal mortality through the best essential newborn care.

It is with this conviction this study is undertaken in the public health facility of Boset district to ascertain essential newborn care to recommending low-cost interventions to save the lives of many neonates that perish in this district. It is necessary to assess essential newborn care practices and associated factors among postnatal mothers because the newborn's most frequent caretaker is their mothers and it is mother practices that shape the future of the newborn [3].

2. Methods and Materials

2.1. Study Design Study Period Study Setting

The institutional-based quantitative cross-sectional study design was conducted from January 1 to February 20/2021 at Boset district is found in East Shao, Oromia regional state in central Ethiopia. The administrative center of the woreda is Welenchity which is located 125 km from the capital city of Ethiopia to the Eastern part of the country. The 2007 national census reported a total population for this woreda of 142,112, of whom 73,925 were men and 68,187 were women [19]. The weroda health office estimates that there are 486 newborns monthly. There were 7 health centers and one primary Hospital in the district. A total of 458 mothers attended postnatal care in the district per month.

2.2. Population, Sample Size Determination, and Sampling Procedure

After obtaining ethical clearance and permission from Adama Hospital Medical College's ethical review Committee,

we conducted a study on Postnatal mothers whose newborns were less than one month old. The sample size was determined using a single population formula by considering: (p=55.4%) prevalence of newborn care practice among postnatal mothers (20), 95% confidence interval, 5% margin of error, and non-response rate of 10%.

$$n = ((z\alpha/2)^2 p(q)) / d^2$$

Where n=sample size, Z=Reliability Coefficient at 95% confidence level

P=Population variance available from previous data, q=1-p

d=Standard error allowed the value of p to be 0.554 (Proportion of mothers who were practicing newborn care was 55.4%) [20].

Then,

$$n = \frac{(z\alpha/2)^2 P(1-P)}{d^2} = \frac{(1.96)^2 0.554(1-0.554)}{(0.05)^2} = 379$$

Adding 10% total sample size=417

Simple random sampling was used to select health facilities found in the district and the desired number of clients was determined based on the number of clients flowing in each health facility using proportional allocation. A systematic random sampling method was used to select study participants. The previous average number of postnatal care users in selected public health facilities 2 months before the study was 839=N and the sample size was 417 and k=N/n which was equal to 839/417=2

2.3. Data Collection Tools and Procedure

Data were collected using an interviewer-administered semi-structured questionnaire and observations. The questionnaire was adopted from related literature [20, 21] and was translated into the local language to make the questions easily understandable. It was retranslated back to English to evaluate its consistency. The questionnaire was divided into six sections. Socio-demographic characteristics of the mother and neonate, Health service utilization and birth history, Source of information on newborn care, Knowledge of mothers about newborn care, attitude of mothers toward newborn care, and essential newborn care practices included in this part. The data were collected through face-to-face interviews and observations. Data collectors were four BSc nurses.

2.4. Study Variables

The dependent variable was the essential newborn care practices. The independent variables were included, Socio-demographic characteristics (Age of mother, marital status, educational status, occupation, income, place of residence). Reproductive characteristics and health services utilization (Parity, ANC visits, skill Birth attendant, mode of delivery) Knowledge, attitude, and belief of mother on newborn care.

2.5. Operational Definition

Essential newborn care practice: A set of practices by postnatal mothers to newborns which includes keeping neonate warm (mother to neonate skin-skin contact and wrap by new or old washed cloths), delayed bathing for 24 hours, safe cord care (Keeping the cord clean and dry without application of any foreign substances), early initiation of breastfeeding within an hour, feeding only breast milk and washing hands before breastfeeding [8, 21]. Good ENBC practice: Those mothers who scored 50% or above on the practice questions [8]. Poor ENBC practice: Those mothers who scored below 50% of the practice questions [8].

2.6. Data Quality Management

The one-day training was given to the data collectors focusing on the questionnaire content to ensure consistency of data, obtaining consent, maintaining neutrality, privacy issues, personal relations, and ethics in research. A pretest was carried out before the actual data collection period on 18 (5%) of the sample size in the Galdiha health center, Adama district. Based on the results of the pre-tests confusion was corrected and modified before the actual data collection time. Filled questionnaires were checked daily for completeness and consistency of responses to eliminate possible errors.

2.7. Data Processing and Analysis

The collected data were checked manually for completion and any incomplete or misfiled questions then the data was cleaned and stored for consistency and entered into Epi info version 7.1 software then it was exported to the statistical package for social sciences (SPSS) version 21 software for analysis. A descriptive analysis was done by using frequency, mean, median, standard deviation, and percentages. Both bivariate and multivariate logistic regression methods were used in the study to examine which of the independent variables were the predictors of the outcome variables. Initially, bivariate logistic regression was carried out to see the association of each of the independent variables with the outcome variables separately. The variables that have a P-value < 0.05, adjusted odd ratio, and 95% confidence level were used as a statistical significance. Finally, the result was compiled and presented using tables, graphs, and texts.

3. Results

3.1. Socio-demographic Characteristics

A total of 411 postnatal mothers have participated in the study giving the response rate was 98.6%. The median (IQR) age of the respondents was 26 (21, 30) years. One hundred eighty (43.8%) of the study participants were in the age group of 15-24 years. Besides, 353 (85.9%) were married, 150 (36.5%) attend primary education (1-8), 236 (57.4%) were housewives, 209 (50.9%) of them were living in rural. Of the total respondents, 215 (52.3%) had a monthly family income of less than 2500 Ethiopian birr (Table 1).

Table 1. Distribution of socio-demographic characteristics among postnatal mothers at public health facilities in Boset district, Oromia Regional State, Ethiopia, 2021.

Variable	Frequency (n=411)	Percent %
Mothers Age in year		
15 – 24	180	43.8
25 – 34	176	42.8
35 – 44	55	13.4
Marital status		
Single	32	7.8
Married	353	85.9
Divorced	13	3.2
Widowed	13	3.2
Educational level		
Illiterate	126	30.7
Primary (1-8)	150	36.5
Secondary (9-12)	85	20.7
Diploma and above	50	12.2
Mother's occupation		
House wife	236	57.4
Farmer	40	9.7
Merchant	39	9.5
Governmental employee	34	8.3
Private employee	34	8.3
Others	33	8.0
Place of resident		
Rural	209	50.9
Urban	202	49.1
Family monthly income (EB)		
<2500	215	52.3
2500 -5000	161	39.2
>5000	35	8.5

3.2. Health Services Utilization and Birth History

Out of the total participants, 369 (89.8%) had attended an antenatal clinic, of which 250 (60.8%) mothers started 1st visit at less than 16 weeks. The majority of mothers (92%) had delivery attended by skilled birth attendants. Two

hundred sixty-four (64.29%) mothers gave birth through spontaneous vaginal delivery. More than half (52.8%) neonates were male and 371 (90.3%) of them had a birth weight of greater or equal to 2500 grams (Table 2).

Table 2. Antenatal and Birth History among mothers attended postnatal care at public health facilities in Boset district, Oromia Regional State, Ethiopia, 2021.

Variables		Frequency (n=411)	Percent %
Age of the neonate	1 day and less	318	77.4
	2 to 28 days	93	22.6
	<2500gm	40	9.7
birth weight of neonate	≥2500gm	371	90.3
	Male	217	52.8
Sex of Neonate 's	Female	194	47.2
	Prime Para	188	45.7
Mother 's parity	Molt and grand multi	223	54.3
	Yes	369	89.8
Attend ANC during this pregnancy	No	42	10.2
	Below 16 weeks	250	60.8
Gestational age during first attends ANC.	16 weeks and above	119	29.0
	Less than 4 times	203	49.4
Number of ANC visit	Equal/more 4 times	166	40.4
	Yes	337	82.0
Plan for the place of delivery	No	74	18.0
	Skilled birth attend	378	92.0
Delivery attend by	Nonskilled	33	8.0
	SVD	264	64.29
Mode of delivery	CS	92	22.4
	Instrumental	55	13.4

Note: gm=gram; ANC, Antenatal care; SVD, Spontaneous vaginal delivery, CS: Caesarean section

Knowledge of Mothers on essential newborn care.

From all study subjects, 266 (64.7%) of mothers had good knowledge about essential newborn care. Of the total respondents, 256 (62.3%) had received at least one piece of information on essential newborn care. Over half (51.7%) respondents replied time of newborns' first bathing is after one day of birth. Among the study subjects, 130 (31.6%) correctly stated that the stump should be uncovered, kept clean & dry. Out of all respondents, 311 (75.7%) answered that clean water should be used to clean the soiled umbilical stump while 145 (35.3%) mothers replied that any substance must not be applied to the umbilical stump. One hundred forty-five (35.3%) mothers knew about the frequency of breastfeeding as 8 to 12 times per day, 316 (76.9%) of them replied that colostrum should be given to their newborns. Additionally, 227 (55.2%) optimal time of breastfeeding initiation is within immediate - 60 minutes. Generally, 266 (64.7%) of mothers correctly answered that exclusive breastfeeding should be maintained until the first 6 months.

3.3. Attitude Towards Essential Newborn Care Practices

An assessment of the attitude of the mothers, 325 (79.1%) of them had a positive attitude toward essential newborn care of which 124 (30.2%) mothers were strongly agreed that newborns lose their body heat faster and 151 (36.7%) of them agreed that it is prevented by mother-newborn skin-to-skin contact. One hundred forty-two (34.5%) of participants disagreed that newborns should be bathed immediately after birth and 193 (47%) strongly agreed on first milk (colostrum) is a benefit for a newborn.

3.4. The Practice of Essential Newborn Care

From all study subjects, the magnitude of good practices was 258 (62.8%) (95%CI: 58.02-67.35). Of the total respondents, 151 (36.7%) mothers have applied the substance to the umbilical stump of their neonate. About 240 (58.4%) mothers bathed their newborns after 24 hours of birth. About 275 (66.9%) study subjects initiated breastfeeding their neonate within an hour after delivery. Additionally, 326 (79.3%) of study participants were fed breast milk as the first feed of neonates while 121 (29.4%) mothers give additional

fluid for their neonates. Over half, 223 (54.4%) mothers didn't wash their hands and breast before breastfeeding a neonate (Table 3).

3.5. Factors Associated with Essential Newborn Care Practice

Both the bivariate and multivariate logistic regression methods were used in the analysis of predictors of the dependent variables. The bivariate logistic regression analysis was carried out to examine the associations between each of the independent variables and the outcome variable separately and the unadjusted odds ratios of the associations and the 95%CI of each independent variable with the outcome variable were obtained. Place of resident, family monthly income, age of neonate, sex of neonate, mother's parity, attend ANC visit, planned where to deliver, birth attendant, mode of delivery, information on danger sign, knowledge of ENBC, and attitude toward ENBC were showed association with outcome variables at $p < 0.25$ and were selected as candidate variables for multivariable logistic regression analysis.

In multivariate analysis, birth attendants, mode of delivery, knowledge, and attitude of mothers toward essential newborn care were found to be significantly associated with the practice of essential newborn care practices. Those mothers who attended delivery by skilled birth attendants were 25.3 times higher to have good practice of essential newborn care as compared with those women who were attended by nonskilled birth attendants [AOR=25.3, 95%CI (2.98, 215)]. Mothers who delivered in were Spontaneous vaginal delivery 2.84 times to have good practice essential newborn care when compared with those mothers give birth in others mode of delivery [AOR=2.84, 95% CI (1.51, 5.34)]. Mothers with good knowledge of essential newborn care were 21.3 times higher to have good practice as compared to their counterparts [AOR=21.3, 95%CI (10.21-44.3)]. Study subjects with a positive attitude were 3.46 times more to have good practice of essential newborn care than those who had a negative attitude toward ENBC [AOR=3.46, 95%CI=(1.42–8.46)] (Table 4).

Table 3. Essential newborn care practices among postnatal mothers at public health facilities, in Boset district, Ethiopia, 2021.

Variables	Category	Frequency (n=411)	Percent %
Baby placed	On the mother's abdomen	263	64
	On clean surface	113	27.5
	On unclean surface	35	8.5
Substance applied on the stump	Yes	151	36.7
	No	260	63.3
	Skin-to-skin contact	81	19.7
keep neonate warm	Wrapped the baby in a cloth	218	53
	Both wrap and skin contact	97	23.6
	Don't wrap well	15	3.6
Neonate wrap by	unwashed cloth	199	48.4
	washed cloth	212	51.6
	Breast milk	326	79.3
Neonate first feed	Animal milk	24	5.8
	Formula feed	18	4.4

Variables	Category	Frequency (n=411)	Percent %
Initial breastfeeding	Homemade	43	10.5
	Immediately-to-1 hour	275	66.9
	After one hour	136	33.1
Give fluid to neonate	Yes	121	29.4
	No	290	70.6
Clean breast& hands before breastfeeding	Yes	188	45.7
	No	223	54.3
Frequency of breastfeeding	8 to 12 times	163	39.7
	On-demand	216	52.6
	Others (don't breastfeed)	32	7.8
First, bathe neonate	Before 24 hours of birth	171	41.6
	after 24 hours of birth	240	58.4
Overall ENBC practices	Good practices	258	62.8
	Poor practices	153	37.2

Table 4. Association between factors and ENBCP among postnatal mothers in Boset district, Oromia Regional State, Ethiopia, 2021.

Variable	ENBC practical level		COR (95% CI)	AOR (95% CI)	P
	Non-practice	Good practice			
Birth attended by					
Skilled birth attend	126 (79.7)	256 (99.2)	32.53 (7.66, 138.11)	25.29 (2.98-215)	0.003
Non skilled	31 (20.3)	2 (0.8)	1.00	1.00	
Mode of delivery					
SVD	88 (57.5)	176 (68.2)	1.59 (1.05, 2.40)	2.84 (1.51-5.34)	0.001
Instrumental or CS	65 (42.5)	82 (31.8)	1.00	1.00	
Knowledge ENBC					
Good knowledge	34 (22.2)	232 (89.9)	31.23 (17.9, 54.48)	21.3 (10.21-44.3)	0.000
Poor knowledge	119 (77.8)	26 (10.1)	1.00	1.00	
Attitude to ENBC					
Positive attitude	80 (52.3)	245 (95.0)	17.2 (9.05, 32.67)	3.46 (1.42-8.46)	0.006
Negative attitude	73 (47.7)	13 (5.0)	1.00	1.00	

Note: P-value<0.05 indicates significantly associated factors with independent variable

ENBC=essential newborn care; COR=crude odd ratio; AOR=adjusted odd ratio

SVD=spontaneous vaginal delivery

4. Discussion

This study showed that overall good essential newborn care practice was 62.8%. The result is lower when compared with the similar study done at Nimala hospital in India, which showed that an adequate level of essential newborn care practice was seen in 90% of postnatal mothers [22], and the result of the study done in Kenya 2015 which showed that only 14% of postnatal mothers poor practice essential newborn care [23]. The difference may be due to the socio-demographic status of the countries. On the other hand, it is higher when compared with the similar study conducted in the East Gojjam Zone, Ethiopia [24], Mandura District, Northwest Ethiopia [25], a study done in Dase referral hospital [26], Fitch town [27] and Nekemte city [21]. The discrepancy may be due to the increment of maternal health care service and institutional delivery from time to time.

According to this study, 240 (58.4%) mothers bathed their newborns after one day of birth. The finding is lower when compared with the similar study result in Bossaso, Somalia [20] but it is higher when compared with the study conducted at Addis Ababa, Ethiopia [8]. This may be due to multi-cultural variation among regions and may be due to differences in awareness of mothers.

This study showed 79.3% of study participants were fed

breast milk as the first feed of neonate and 66.9% of newborns were initiated breastfeeding within an hour after delivery, 20.9 of them discarded colostrum's milk, 39.7% feeding breast milk 8 to 12 times. The finding is lower when compared to the similar study at Dase referral hospital [26] and at Addis Ababa, Ethiopia [8] but it is higher than the same study in Gujarat [28], in four regions of Ethiopia [29]. The discrepancy may be due to differences in mothers' level of knowledge and attitude toward breastfeeding.

In this study, the odd of good practice of essential newborn care was 25.3 times higher for mothers who were attended birth by the skilled birth attendant as compared with those women who were attended by nonskilled birth attendants. The finding is similar to the study result in Tigray [30]. It may be due to institutional delivery increased from time to time and the chance of counseling during delivery by skilled birth attendants. It may be also due to mothers observe the action of immediate essential newborn care practices by skilled birth attendants.

Moreover, SVD of delivery was 2.84 times more positively associated with good essential newborn care practices. The finding is in line with a study done in Nekemte city [21] but contrary to the study in Dase referral hospital [6]. The difference may be due to variation in the delivery attendant since the majority of study subjects in Dase hospital were delivered at home. In addition, SVD delivered

mothers have a probability of giving care for their neonate by themselves.

Mothers with good knowledge of essential newborn care were 21.3 times higher to have good practice as compared to their counterparts. The finding is similar to the study result in Madura district [25] as well as in Mekele city [31]. It is maybe due to mothers practice all that they know to benefit their baby. Study subjects with a positive attitude were 3.46 times more to have good practice essential newborn care than those who had a negative attitude toward ENBC. The finding is in line with a similar study done in Addis Ababa [8]. Attitude affects practical conditions and it may be due to mothers do what they believe is good for their newborn.

Limitation of the study

Since it is a cross-sectional study, it did not address the cause-and-effect relationship of the factors and the outcome variables. The observation was for a short period and could not identify frequently and consistency of practice. In addition, there was a risk that mothers may report what was expected of them but their usual and actual practices may be different.

5. Conclusion and Recommendation

In this study, the level of essential newborn care practice is relatively higher than the study results in Oromia Regional State. Delivery attendant, mode of delivery, Knowledge, and attitude of mothers were found to be significant predictors of essential newborn care practices. Improving essential newborn care practices of the mothers, by implementing a multidisciplinary team approach, promoting an awareness campaign, and conducting a further study at the community and institutional level were recommended. It also recommended conducting a community forum to create awareness and change the attitude of mothers as well as encouragement to all mothers deliver in the health facility.

Abbreviations

AHMC, Adama Hospital Medical College; ANC, Antenatal Care; ENBCP, Essential Newborn Care Practice; MCH, Maternal, and Child Health; NMR, neonatal mortality rate; PNC, Post Natal Care SBA, Skilled birth attendant; SDG, Sustainable developmental Goal; SVD, Spontaneous vaginal delivery

Author Contributions

All authors made significant contributions to the conception and design, data acquisition, or data analysis and interpretation; participated in the drafting of the article or critically revised it for important intellectual content; agreed on the journal to which the article would be submitted; gave final approval of the version to be published; and agreed to be responsible for all aspects of the work.

Ethics Approval and Consent to Participate

The study was conducted following the declaration of Helsinki. Ethical clearance and approval were obtained from Adama Hospital Medical College ethical review Committee and the letter was submitted to the Boset district Health office and Boset district also wrote letters for selected public health facilities. After explaining the procedure benefit and risks of the study in detail informed verbal consent was sought from all study participants. All the participants were reassured of the anonymity and as a personal identifier was not used.

Availability of Data and Material

The data are available from the corresponding author and will be provided upon reasonable request.

Source of Funding

The cost of the study was covered by the research investigator.

Consent for Publication

Not applicable.

Disclosure

All the authors do not have any possible conflicts of interest.

Acknowledgments

We would like to thank Adama Hospital Medical College's department of public health. We are also grateful to the study participants for their willing responses and precious time, and finally, we acknowledge all those who contributed to this study.

References

- [1] Oza S, Lawn JE, Hogan DR, Mathers C, Cousens SN. Neonatal cause-of-death estimates for the early and late neonatal periods for 194 countries: 2000–2013. *Bulletin of the World Health Organization*. 2014; 93: 19-28.
- [2] Rerimoi AJ. Development and assessment of systems for population-based estimation of neonatal and perinatal mortality in The Gambia: London School of Hygiene & Tropical Medicine; 2019.
- [3] Shahjahan M, Ahmed MR, Rahman MM, Afroz A. Factors affecting newborn care practices in Bangladesh. *Pediatric and perinatal epidemiology*. 2012; 26 (1): 13-8.
- [4] Allen E, Avan B, Beaumont E, Becker A, Berhanu D, Gautham M, et al. *Informed Decisions for Actions in Maternal and Newborn Health 2010–17 Report What works, why and how in maternal and newborn health*. 2017.

- [5] Blencowe H, Cousens S, Jassir FB, Say L, Chou D, Mathers C, et al. National, regional, and worldwide estimates of stillbirth rates in 2015, with trends from 2000: a systematic analysis. *The Lancet Global Health*. 2016; 4 (2): e98-e108.
- [6] Estimation UNIGfCM. Levels & Trends in Child Mortality: Report 2017: Estimates Developed by the UN Inter-Agency Group for Child Mortality Estimation: United Nations Children's Fund; 2017.
- [7] Sisay W, Tesema GA, Worku MG, Angaw DA. Trend and factors associated with under-five mortality in Ethiopia further analysis of 2000-2016 Ethiopian demographic and health survey: A Multivariate decomposition analysis. 2020.
- [8] Berhan D, Gulema H. Level of Knowledge and Associated Factors of Postnatal Mothers towards Essential Newborn Care Practices at Governmental Health Centers in Addis Ababa, Ethiopia. *Advances in Public Health*. 2018; 2018.
- [9] Organization WH. World health statistics 2015: World Health Organization; 2015.
- [10] Kim YM, Ansari N, Kols A, Tappis H, Currie S, Zainullah P, et al. Assessing the capacity for newborn resuscitation and factors associated with providers' knowledge and skills: a cross-sectional study in Afghanistan. *BMC pediatrics*. 2013; 13 (1): 140.
- [11] UNICEF U. Levels and trends in child mortality. New York: UNICEF. 2015.
- [12] Turner K. How participatory practice can help to strengthen the role of volunteering in sustainable development: An organizational perspective. *IDS Bulletin*. 2015; 46 (5): 83-94.
- [13] Fund UNCs. Levels & Trends in Child Mortality: Report 2018 Estimates Developed by the UN Inter-agency Group for Child Mortality Estimation. 2018.
- [14] Organization WH, Zupan J, Åhman E, Lander T. Neonatal and perinatal mortality: country, regional and global estimates: World Health Organization; 2006.
- [15] Lawn JE, Kinney MV, Black RE, Pitt C, Cousens S, Kerber K, et al. Newborn survival: a multi-country analysis of a decade of change. *Health policy and planning*. 2012; 27 (suppl_3): iii6-iii28.
- [16] Burton T, Saini S, Maldonado L, Carver JD. Parental refusal for treatments, procedures, and vaccines in the newborn nursery. *Advances in Pediatrics*. 2018; 65 (1): 89-104.
- [17] Lassi ZS, Aftab W, Ariff S, Kumar R, Hussain I, Musavi NB, et al. Impact of service provision platforms on maternal and newborn health in conflict areas and their acceptability in Pakistan: a systematic review. *Conflict and health*. 2015; 9 (1): 25.
- [18] Castalino F, Nayak BS, D'Souza A. Knowledge and practices of postnatal mothers on newborn care in tertiary care hospital of Udupi district. *Nitte University Journal of health science*. 2014; 4 (2): 98.
- [19] Central statically Agency of Ethiopia (CSA), (Boset), 2007-[httpsen-Wikipedia. ogwindex. php](https://en.wikipedia.org/w/index.php)
- [20] Eshetu Y. Assessment of the level of knowledge and practice of essential newborn care and its determinants among recently delivered women in Ficthe town. North Shewa Zone, Oromia Region, Ethiopia. 2015.
- [21] Efa BW, Berhanie E, Desta KW, Hinkosa L, Fetensa G, Etafa W, et al. Essential newborn care practices and associated factors among postnatal mothers in Nekemte City, Western Ethiopia. *PloS one*. 2020; 15 (4): e0231354.
- [22] Angel Rajakumari G. Assessing the Knowledge and Practice Regarding Newborn Care among Postnatal Mother in Nirmala Hospital Suryapet, Telangana, India. *Global Journal of current research*. 2015; 3 (4): 106-10.
- [23] Kumola AM. Newborn care practices among postnatal mothers in Garissa County, Kenya. *Kenyatta University*; 2015.
- [24] Teshome K, Mekonen A, Genet D. Community Based Essential New Born Care Practices and Associated Factors among Women in the Rural Community of Awabel District, East Gojjam Zone, Amhara, Ethiopia, 2013. *International Journal of Advances in Scientific Research*. 2015; 1 (01): 17-27.
- [25] Tegene T, Andargie G, Nega A, Yimam K. Newborn care practice and associated factors among mothers who gave birth within one year in Mandura District, Northwest Ethiopia. *Clinics in Mother and Child Health*. 2015; 12 (1).
- [26] Semanew Y, Etaye M, Tizazu A, Abebaw D, Gebremedhin T. Newborn care practices and its determinants among postnatal mothers in Dessie Referral Hospital, Northeast Ethiopia. *BMC research notes*. 2019; 12 (1): 96.
- [27] Amsalu R, Morris CN, Chukwumalu K, Hynes M, Janjua S, Couture A, et al. Essential newborn care practice at four primary health facilities in conflict-affected areas of Bossaso, Somalia: a cross-sectional study. *Conflict and health*. 2019; 13 (1): 27.
- [28] Shwetal B, Pooja P, Neha K, Amit D, Rahul P. Knowledge, attitude and practice of postnatal mothers for early initiation of breastfeeding in the obstetric wards of a tertiary care hospital of Vadodara city. *Hindu*. 2012; 134: 81.5.
- [29] Callaghan-Koru JA, Seifu A, Tholandi M, de Graft-Johnson J, Daniel E, Rawlins B, et al. Newborn care practices at home and in health facilities in 4 regions of Ethiopia. *BMC pediatrics*. 2013; 13 (1): 198.
- [30] Weldeargeawi GG, Negash Z, Kahsay AB, Gebremariam Y, Tekola KB. Community-Based Essential Newborn Care Practices and Associated Factors among Women of Enderta, Tigray, Ethiopia, 2018. *International Journal of Reproductive Medicine*. 2020; 2020.
- [31] Berhea TA, Belachew AB, Abreha GF. Knowledge and practice of Essential Newborn Care among postnatal mothers in Mekelle City, North Ethiopia: A population-based survey. *PloS one*. 2018; 13 (8): e0202542.