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Knowledge and practice of essential newborn care among postnatal mothers in Addis Ababa City Health Centers, Ethiopia

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Essential newborn care is a wide-ranging approach planned to improve the health of newborn through interventions after pregnancy. In Ethiopia, about 120,000 newborns die every year in the first weeks of life which accounts for 42% of all deaths of under-five mortality. Therefore, this study aimed to assess the knowledge and practice of essential newborn care practices among mothers in Addis Ababa, Ethiopia. A facility-based cross-sectional study was conducted among the enroll 576 women in the first six weeks of post-partum attending ANC in Addis Abeba Health facility. Data were gathered through the use of pre tested standard questionnaire. The collected data were uploaded to computer using EpiData version 3.1. and the analysis was made through SPSS package version 21. Logistic regression was carried out to assess possible associations. The strength of association was measured at P<0.05 with 95% confidence interval. The study revealed that the level of essential newborn care practices was 38.8%. Education and advise about essential newborn care practices during and after birth by skilled birth attendants (OR=2.17, 95%, CI=1.42,3.31), home visit by health extension worker (OR=1.55, 95% CI=1.03,2.32) and place of delivery at health center (OR=7.69, 95% CI =1.32, 36.42), at private health facility (OR=9.18, 95% CI=1.32, 63.75) and government hospital (OR=6.68, 95% CI =1.32, 33.87) were found to have statistically significant association with essential newborn care practices. The result of this study indicated that the level of essential newborn care practices was low. Government should take remedial action to improve newborn care practice.

Key words: Essential new born care, postpartum, Ethiopia.

INTRODUCTION

Essential new born care (ENC) is a wide-ranging approach planned to improve the health of newborns through interventions during immidate postnatal period. Infant deaths during the neonatal period mostly occur at home and are often unregistered. In addition, postnatal services were scarce and traditional practices, such as

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delayed breastfeeding, untimely bathing, and unsafe cord care contributed to high newborn mortality rates (UNICEF (2004); Berhan and Gulema, 2018; Tinkera et al, 2010).

Globally, each year approximately four million babies die during the first 28 days of life and another three million are stillborn and seven newborn die every minute before their first month of life. Neonatal mortality accounts for approximately two-thirds of all infant mortality and 38% of deaths of children aged less than five years. Ninety-nine percent of these deaths occur in middle- and low-income countries with half of deliveries occurring at home (Lawn and Zupan, 2006; Karger et al, 2011; Mulatu et al., 2017).

In developing countries, the risk of death could be easily prevented and avoided with simple, low cost and short period of time; however, the problem is still persisting due to lack of adequate maternal neonatal care practices (Berhea et al., 2018; Worku and Gessese, 2012; (EDHS, 2011). Approximately 300,000 African babies die on the first day of birth due to lack of adequate maternal neonatal care practices. It accounts more than 25% of the world's newborn deaths with the highest risk of neonatal death Kerber et al. (2007).

Ethiopia is one of the three countries in Africa with the highest newborn death, and an estimated neonatal cause of death from infection is 47% which accounts for almost half of the neonatal death. Each year, about 120,000 newborn die at their first week every year and this accounts for 42% of all deaths of under-five mortality in Ethiopia (Worku and Gessese, (2012). According to Ethiopian Demographic Health Survey (EDHS) 2011 report, neonatal mortality rate has remained stable at 37 deaths per 1, 000 (Ethiopia Demographic and Health Survey (2011). The neonatal mortality in Addis Ababa is 21 per 1000 live birth while all health facilities of different categories are currently offering postnatal care. The total number of live birth attended in health facilities 46,134 among these 98 neonatal deaths was occurred and neonatal institutional death rate of Addis Ababa is 0.2 (FMOHE, 2011); Socio Economic Profile of Addis Ababa (2011/12).

To reduce neonatal death, Ethiopian government did many health interventions to improve the quality and access to health service by implementing a health extension program, training midwifes, enhancing referral system, integrating health services and routine immunization. But neonatal death in Ethiopia is still high; even if it is one of the top ten countries in Africa (Health Sector Development Plan (2014); Federal Democratic Republic of Ethiopia (2015). Majority of mothers deliver at home in the presence of traditional birth attendants, which has resulted in many harmful traditional practices applied to the newborn (CSA, 2014; Degefie et al., 2014). Even though some women give birth by skilled birth attendants in a facility newborn care practice, it may be affected by traditional practices after discharge at home by the family and community. Studies on essential new born care are few in study area. Therefore, this study attempted to assess Knowledge and Practice of Essential Newborn Care Among Postnatal Mothers in Addis Ababa City Health Centers, Ethiopia.

METHODS

Study design and period

Health institution based cross sectional study design was applied from February 27 to March 27, 2018 to study the Knowledge and Practice of Essential Newborn Care Among Postnatal Mothers in Addis Ababa City Health Centers, Ethiopia.

Study area and setting

The study was conducted in health facility of Addis Ababa, capital city of Ethiopia with a total population of 3,048,631, of whom 1,595,968 were females and the rest 1,452,663 males (Profile of Addis Ababa city (2011/12). The city has government owned eleven hospitals and eighty six health centres and 31 private hospitals and 700 different level private clinics are providing health service in the city (FMOHE, 2012; CSA, 2007).

Population and sampling

The sources of populations were all women in reproductive age group who visited health centres in Addis Ababa for material care health service (MCH). Women who attended post natal care in selected health centres in study period were considered as study population. A total of 576 samples was determined using single population proportion formula. When calculating the sample size; the following assumption was considered:95% confidence interval, proportion of 65% [Callaghan-Koru et al. (2013), 10% non-response rate and 1.5 design effect. Multistage sampling technique was employed to select the respondents of the study. First, out of ten sub-cities found in Addis Ababa City government, four sub-cities namely Gullele, Kolfe, Addis Ketema and Arada, were selected using simple random sampling method. Secondly, out of a total of 36 health centres found in the selected four sub-cities, a total of 15 (3 in Arada and 4 in each of Gullele, Kolfe, and Addis Ketema) Health centers were selected by a lottery method. The calculated sample size was allocated to each health facility based on population to proportion to size of the selected health centres. Finally, respondents in each health facility were selected using systematic random sampling technique where every 5th case/visitor was selected and reviewed.

All Women who gave a live birth, who were within six weeks of postpartum and came for immunization and postpartum visit to health centres during data collection period were included in the study. However, women who were seriously sick or with known mental illness, still give birth and neonatal death were excluded from the study.

Data collection and analysis

Data was collected using adopted and modified structured questionnaire from other researches to assess variables which influence new-born care practice of mothers. The questionnaire was prepared in English and translated to Amharic, and translated back to English to check for consistency of the questionnaire. The translated Amharic version questionnaire was pretested in similar areas outside of the study site prior to the actual data collection. Accordingly minor corrections regarding language clarity and data collection tool were incorporated into the study tool. Five data

Table 1. Socio demographic characteristics of women in postpartum period, in health centres of four sub-cities of Addis Ababa city Administration, Ethiopia (N= 576).

Variable	Frequency	Percent
Mothers age		
15-24	231	40.1
25-34	311	54.0
35-44	34	5.9
Religion		
Orthodox	317	55.0
Muslim	200	34.7
Protestant	59	10.3
Ethnic groups		
Amhara	198	34.4
Gurage	174	30.2
Tigre	116	20.1
Oromo	42	7.3
Others*	46	8.0
Marital status		
Married	511	88.7
Never married	24	4.2
Divorced	41	7.1
Education level		
Formal Education	425	73.8
Can't read and write	90	15.6
Informal education	61	10.6
Occupation		
House wife	328	56.9
Employee	155	26.9
Merchant	93	16.2

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collectors accompanied by their supervisor were trained for a day on the procedures of data collection techniques, approaching participants, ethical issues and quality of data maintaining.

The data was cleaned manually, checked for completeness, consistency, clarity, coded and by double data entry, uploaded to EpiData version 3.1. and exported to SPSS version 21 software for further analysis. Frequency tables and descriptive summaries were used to describe the study variables. Significant variables (P <0.2) detected at bivariate level were subsequently entered into Multivariate logistic regression (LR) model to control for possible confounding variables. Variables that had significant association with the outcome variables in the crude analysis were entered into multivariable logistic model.

In a multivariable logistic regression model using adjusted odds ratio (AOR) independent predicators of new-born care practices among post- partum mothers were identified through controlling the confounding effects of other variables. Before multivariate analysis, independent variables were cheeked for multi co-linearity effect using variance inflation factor and Hosmer lemshow goodness of fit chi-square was checked for possibility of performing a logistic regression analysis.

RESULTS

Socio-demographic characteristics

A total of 576 post-partum women participate in the study make a response rate of 100%. About 311(54.0%) of the respondents belong to age group 25-34 years with mean age of 26 (SD of ± 4.6) years respectively, and more than four-fifth of the respondents, 511(88.7%) of the women were married. Furthermore, three hundred twenty eight which accounts (56.9%) of the respondents were house wives by their occupation. Finally, majority 425(73.8%) of the respondents attended formal education (Table 1).

Obstetric factors and health service utilization

Five hundred fifty four (96.2%) of the respondents had

Table 2. Obstetrics factors and health service utilization of women in postpartum period, in health centres of four sub-cities of Addis Ababa city Administration, Ethiopia.

Variable	Frequency	Percent
Antenatal follow up (n=576)		
Yes	571	99.1
No	5	0.9
Place of ANC visit (n=571)		
Health centre	525	91.1
Government hospital	16	2.8
Private health facility	30	5.3
Gestational age at first visit (n=576)		
<4 month	414	72.5
≥4 month	157	27.5
Place of current delivery(n=576)		
Health centre	457	79.3
Private health facility	84	14.6
Home	18	3.1
Government hospital	17	3.0

less than three live births and twenty two (3.8%) had three and more live births. Five hundred seventy one (99%) of the respondents have attended antenatal care (ANC) for their current pregnancy of which 525 (91.9%) had ANC visit at health centres. Almost three fourth 414 (72.5%) of the respondents have started ANC visit at early to 4 month of conception and 157 (27.5%) started at greater than four month of gestational age. Four hundred and fifty seven (79.3) of the respondents gave birth at health centres (Table 2).

Home visit by HEWs and advise by skilled birth attendants

Two hundred fifty seven (44.6%) of the respondents had visited by health extension worker in the last six month. About 157 (61.1%) of the respondents had been educated on drying and wrapping of new-born. 189 (73.5%) of mother experienced early initiation of breast feeding and the remaining 160 (62.3%) on new-born danger sign during home visit. Above half, 328 (56.9%) of women have been advised on early initiation of breast feeding, 418 (72.7%) on delay bathing and 412 (71.5%) on cord care by skilled birth attendants before and after birth (Table 3).

Magnitude of essential newborn care practices

Early initiation of breast feeding

One hundred ten (19.1%) of the mothers were given additional feeding other than breast feeding with in the first month and the item of additional feeding were 44 (40.0%) water, 43 (39.1%) formula milk and 15 (13.6%) cow milk and 8 (7.3%) honey. Five hundred thirty five (92.9%) of the respondents have reported they plan to continue exclusive breast feeding during the first six months (Table 4).

Safe cord care

Ninety two (16.0%) of the respondents were reported as have applied anything on the cord, among these 74 (80.4%) and 18 (19.6%) of women had applied Vaseline and butter respectively. Most of the respondents 540 (93.8%) have gone to health centre for cord infection and 69 (12.2%) of women had given home medication. Three hundred twelve (54.2%) of women took care of cord bleeding while 368 (63.9%) of women kept the cord dry and clean (Table 5).

Delayed bathing

Delay bathing of a new-born baby after the first 24 h of birth to help prevent the risk of hypothermia. With respect to adopting a good bathing practice, the result shows only 309(56.3%) of the respondents bathed their new-born baby after 24 h after birth. Two hundred and sixty-seven (46.4%) of the women had given bath within 24 h, whereas 309(53.6%) of women had given bath after 24 h (Figure 1).

The distribution of essential new born care practices

Only 218 (38.8%) of the respondents fulfil the three essential new-born care practices which is lower than each individual practices that is, early initiation of breast feeding 486 (88.4%), safe cord care 484 (84.4%) and

Table 3. Home visit by HEWs and advise by skilled birth attendants of women in postpartum period, in health centres of four sub-cities of Addis Ababa city Administration, Ethiopia.

Variable	Frequency	Percent
Home visit by health extension worker(n=576)		
Yes	257	44.6
No	319	55.4
Drying and wrapping (n=257)		
Yes	157	61.1
No	100	38.9
Early initiation of breast feeding (n=257)		
Yes	189	73.5
No	68	26.5
Danger sign (n=257)		
Yes	160	62.3
No	97	42.4
Health education and advise by SBAs		
Early initiation of Breast feeding (n=576)		
Yes	328	56.9
No	248	43.1
Delay bathing (n=576)		
Yes	418	72.7
No	158	27.3
Cord care(**n=576**)		
Yes	412	71.5
No	164	28.5

Table 4. Practice on initiation of breast feeding of women in postpartum period, in health centres of four sub-cities of Addis Ababa city Administration, Ethiopia.

Variable	Frequency	Percent
Intonation of first breast milk (colostrum) (n=576)		
Yes	550	95.5
No	26	4.5
Time the first breast milk (colostrum) (n=550)		
Within one hour afterbirth	486	88.4
After one hour after birth	64	11.6
Important for the first 6 month (n=576)		
Breast milk	535	92.9
Additional foods	41	7.1
Additional fluid given (n=576)		
No	466	80.9
Yes	110	19.1
Additional fluid given for new-born (n=110)		
Water	44	40.0
Infant formula	43	39.1
Cow milk	15	13.6
Honey	8	7.3
Bottle feeding for current new-born (n=576)		
No	456	79.2
Yes	120	20.8
Reason for bottle feeding n=120)		
My breast has no enough milk	51	42.1

Table 4. Cont'd

I am employee	41	34.3
I am too busy with homework	28	23.6
Water is important in the first one month (n=576)		
No	482	83.7
Yes	94	16.3

Table 5. Practice of cord care of women in postpartum period, in health centres of four sub-cities of Addis Ababa city Administration, Ethiopia.

Variable	Frequency	Percent
Apply something on the cord(n=576)		
No	484	84.0
Yes	92	16.0
What did you apply (n=92)		
Vaseline	74	80.4
Butter	18	19.6
What do you do if cord bleeds or have foul smelling discharge?		
Go to health centre (n=576)		
Yes	540	93.8
No	36	6.2
Home medication (n=576)		
No	507	88.0
Yes	69	12.0
Take care of cord bleeding(n=576)		
Yes	312	54.2
No	264	45.8
keep it dry and clean(n=576)		
Yes	368	63.9
No	208	36.1

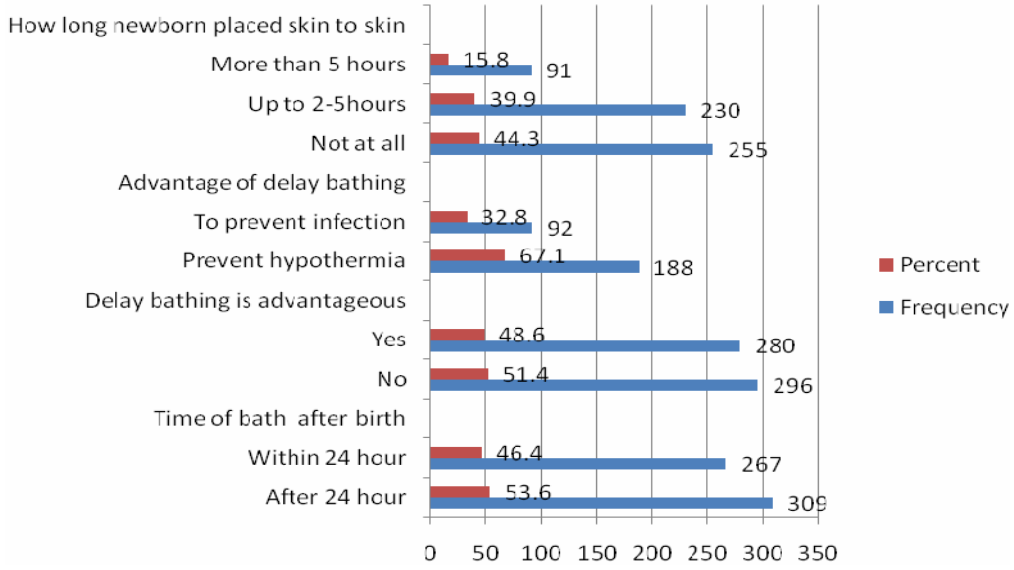

Figure 1. Distribution of delay bathing of the neonate of women in postpartum period, in health centres of four sub-cities of Addis Ababa city Administration, Ethiopia.

Table 6. Association between selected factors and good new born care practices of women in postpartum period, in health centres of four sub cities of Addis Ababa city Administration, Ethiopia.

Characteristics	New-born care practices (%)		COR (95%CI)	AOR (95%CI)
	Yes	No		
Age				
Less than/equal to 26	207(52.0)	191 (48.0)	1.00	1.00
Greater than 26	69 (45.4%)	83(54.6%)	1.110 (0.76,1.16)	0.79(0.52,1.19)
Home visit by health extension workers				
Yes	66(34.6%)	125(65.4%)	1.31(0.91,1.89)	1.55(1.03,2.32)*
No	152(41.0%)	219(59.0%)	1.00	1.00
Skilled birth attendants advise				
Yes	112(35.1%)	207(64.9%)	1.43(1.01,2.01)*	2.17(1.42,3.31)*
No	106(43.6%)	137(56.4%)	1.00	1.00
Place of delivery				
Home	2(11.1%)	16(88.9%)	1.00	1.00
Government hospital	28(34.1%)	54(65.9%)	4.14(0.89,19.33)	6.68(1.32,33.87)*
Private health facility	6(40.0%)	9(60.0%)	5.33(0.88,32.15)	9.18(1.32,63.75) *
Health centre	182(40.7%)	265(59.3%)	5.49(1.24,24.18)*	7.69(1.32,36.42) *

delayed bathing 309 (53.6%).

Knowledge of respondents' on danger signs of the new-born

About 369 (64.1%) of the respondents answered average and above about knowledge questions concerning poor sucking or not been able to breast feed, fever, fast breathing, lethargic or unconscious, hypothermia, convulsion, umbilical infection/such as redness of the cord, and bleeding from the cord.

Factors associated with essential new born care practices

In order to identify the association of independent variables with essential new-born care practices both bivariate and multivariate analysis were made. Those variables showed association with outcome variables in the bivariate analysis like home visit by health extension workers, importance of water during one month, bottle feeding, substances applied on the cord, advantage of delay bathing, place of delivery, time of postnatal care visit and advice by skilled birth attendants were selected as candidate variables for multivariable logistic regression analysis.

Table 6 indicated that those women who delivered at health centres are 5.4 times more likely to practice essential new born care practice as compared with mothers who delivered at home with [COR=5.49, 95% CI = (1.24,24.18)]. Mothers who delivered at private health facility are 5.3 times more likely to practice essential new born care practice as compared with those mother who delivered at home with [COR=5.33, 95% CI = (0.88,32.15)]. Those who delivered at government hospital are 4 times more likely to practice essential new born care practice as compared with who delivered at home with [COR=4.14, 95% CI =(0.89,19.33)]. In another study, women who got advise by skilled birth attendants about essential new-born care practices during and after pregnancy were 1.4 times more likely to practice essential new-born care practices as compared with those women who did not recieve advise about essential new-born care practices during and after pregnancy [COR=1.43, 95% CI = (1.01,2.01]. Mothers who were visited by HEWs were 1.3 times more likely to practice essential new-born care practice as compared with those who were not visited with [COR=1.31, 95% CI = (0.91,1.89] (Table 6). The multivariable logistic regression analysis was used by taking all these factors into account simultaneously and only four of the most contributing factors remained to be significantly and independently associated with essential new-born care practices (place of delivery, time of postnatal care visit, advice about essential new-born care practices by skilled birth attendants and home visit by health extension workers).

Place of delivery was found to have statistically significant association with essential new-born care practice of women. Mothers who delivered at health centres are 7.6 times more likely to practice essential new born care practice as compared with those who delivered at home with [AOR=7.69, 95% CI = (1.32,36.42)]. Mothers who delivered at private health facility are 9 times more likely to practice essential new born care practice as compared with mothers who delivered at home with [AOR = 9.18, 95% CI =

(1.32,63.75)]. Those women who delivered at government hospital are 6.6 times more likely to practice essential new born care practice as compared with those women who delivered at home with [AOR=6.68, 95% CI = (1.32,33.87)].

Advice by skilled birth attendants about new-born care practices showed statistically significant association with essential new-born care practice of women. Study participant who recieve advise by skilled birth attendants about essential new-born care practices during and after pregnancy were 2 times more likely to practice essential new-born care practices as compared with who recieve advise about essential new-born care practices during and after pregnancy [AOR=2.17, 95% CI = (1.42, 3.31]. The presence of home visit by HEWs showed statistically significant association with essential new-born care practice of women. Mothers who were visited by HEWs were 1.5 times more likely to practice essential new-born care practice as compared with those who had were not visited with [AOR=1.55, 95% CI = (1.03, 2.32] (Table 6).

DISCUSSION

The finding of this study revealed that the prevalence of new-born care practices was 38.8% and the prevalence of each component of new-born care practices included early initiation of breastfeeding (88.4%), safe cord care (84.0%) and thermal care (53.6%). A home visit by health extension workers, the timing of postnatal care visit, advice about essential new-born care during and after pregnancy, and place of delivery were significantly associated factors of the essential newborn care practices.

This study found that 84.0% of the women practice safe cord care, by keeping clean and dry, this result is higher than that in a study done in Nepal, 2010 (Sabita, 2010). The possible reason for the variation might be due to the expanding health services coverage and increased awareness and information and maternal health services. This study found lower than the study results of JSI /L10K baseline household survey in 2009 (The Last Ten Kilometers Project, 2009), Southern Tanzania in 2010 (Sabita, (2010), and East Gojam, Ethiopia, 2013 (Teshome et al., 2015). This may be due to the study setting, multi-cultural variation among countries and regions.

In this study, about 16.0% of the women applied a different substance on the cord like butter and vaseline. Among that 19.6% of the women have applied butter, this is lower than a study done in Jimma, 2008 (Tsinuel and Nida, 2008), Uganda, 2010 (Peter et al., 2010; Bangladesh, 2011; Mosiur et al., 2011) and JSI /L10K baseline household survey in 2009 (The Last Ten Kilometers Project, 2009). However, it is higher than the study done in East Gojam, 2013 (Teshome et al., 2015). This may be due to awareness or maybe because most people think that applying butter would lubricate the cord and prevent dryness.

When the mother asked what they would do if the cord bleeds or have a foul-smelling discharge, 93.8% of them responded that they would take their neonate to the health center, this may be due to better awareness and relatively better accessibility to health facilities. Since 96.8% of deliveries took place in health facilities, cord cutting and tying procedures were carried out by health professionals. The women responsibility were only to keep it clean and dry, otherwise different substance application would expose the neonate to cord infection and even may lead to death.

The prevalence of timely initiation of breastfeeding observed in the study area was 88.4%. This is higher than study finding of EDHS in 2011 (EDHS, 2011), Nepal in 2010 (Sabita, (2010), JSI/L10K baseline household survey in 2009 (The Last Ten Kilometers Project, (2009), Goba Woreda, South East Ethiopia in 2011 (Tesfaye et al., 2011) and it is higher than the study finding of EDHS 2011 Addis Ababa region (EDHS, 2011), Tanzania, 2010 (Sabita, (2010), Jimma Arjo Woreda, Southwest Ethiopia in 2012 (Dessalegn et al., 2012) and study conducted in East Gojam in 2013 (Teshome et al., 2015).

The finding of this study was found to be higher than national prevalence, other research areas reports, and regional reports. This higher result may be due to awareness about the advantage of early initiation of breastfeeding, about the recommendation that all new-borns should start breastfeeding immediately (within the first hour after delivery) and the feeding of colostrum also promoted. This study showed that 95.5% of mothers had given colostrum. This could be due to media exposure, information and a high percentage of institutional delivery. Women who gave additional fluid to their current new-born in this study was 19.1% which was lower than the national (EDHS, 2011).

Compared to safe cord cutting and early initiation of breastfeeding, bathing of the newborn after 24 h was practiced by only 53.6% of the women. This finding is higher than a study done in Nepal, 2010, JSI /L10K baseline household survey in 2009, a study done in Jimma,2008, a study done in East Gojam, 2013 (Sabita, 2010; The Last Ten Kilometers Project, 2009; Teshome et al., 2015; Tsinuel and Nida, 2008). The finding of the study was found to be unacceptably lower, this may be because of awareness about the importance of delayed bathing and may be lack of proper advise before, during and after birth.

In this study those women who were visited by a health extension worker (HEW) are more likely to practice essential newborn care (ENBC) as compared with those women who do not visit. A consistent finding was documented in a study done in Nepal in which female Community Health Volunteers were one of the predictors (Sabita, 2010).

This might be related to the fact that women visited by

HEWs may have a better understanding of the ENBC practices. This may be due to on-going progress advice about the ENB care during the first Post Natal Care (PNC) visit. Skilled birth attendants counseling has been accepted as a key factor influencing the healthy outcome of pregnancy and child survival (Mannan et al., 2008); Gogia and Sachdev (2010). The finding of this study revealed that advice about ENBC practices showed statistically significant association with ENBC practice of women. The likely hood of practicing ENBC was high among women who had got advice than those women who had not got advice during and after pregnancy. This may be due to on-going advice and counselling during and after pregnancy.

The promotion of new-born care practices through home visits by health extension workers has been shown to reduce newborn deaths in high mortality settings in Asia (Health Sector Development Plan (2014). Evidence from this study strongly showed that the place of delivery was a statistically significant association with ENBC practice of women. Those women who delivered at health centres, private health facilities, and government hospitals were more likely to be practice ENBC as compared with those who delivered at home. This could be those women who delivered at health facilities were educated and advised about the ENBC during and after pregnancy.

CONCLUSION AND RECOMMENDATION

In conclusion, the level of comprehensive ENB care practices was low even though the majority of respondents practice early initiation of breastfeeding and safe cord care. Home visit by HEWs, timing of PNC visit by skilled birth attendants, advice about ENBC practices during and after pregnancy and place of delivery were found to be independent predictors of ENBC practices in the study area. Community oriented promotion of essential new-born care practices including health extension workers, skilled birth attendants and women participation on maternal and new-born health issues. Then, Antenatal and postnatal care visit is one of the key interventions areas of maternal and neonatal health so that health workers should focus and promote essential new-born care practices during antenatal and postnatal visit.

ABBREVIATION

AARH, Addis Ababa regional Health Bureau; **AAU,** Addis Ababa University; **ANC,** ante natal care; **DHS,** Demographic Health Survey; **ENBC,** essential newborn care; **EDHS,** Ethiopian Demographic Health Survey; **HEW**, health extension worker; **LBW,** low birth weight; **LMICs,** low and middle income countries; **MDG,** millennium development goal; **MMR,** maternal mortality ratio; **MOH,** Ministry of Health; **NB,** new born; **NGO,** non governmental organization; **NM**, neonatal mortality; **NMR,** neonatal mortality ratio; **PNC,** post natal care; **REC,** review ethical committee; **SBAs,** skilled birth attendants; **STS,** skin to skin contact; **U5M,** under five mortality; **WHO,** World Health Organization.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

An ethical approval was obtained from Research and Ethics Committee (REC) of College of Medicine and Health Sciences, Addis Ababa University. Permission letter were taken from Addis Ababa Health Department, then informed written consent were obtained from the respondents.

AVAILABILITY OF DATA AND MATERIAL

The data used to support the findings of this study are available from the corresponding author upon request.

CONFLICT OF INTERESTS

All authors declare that they have no conflict of interests.

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