Essential Newborn Care: Practices among Rural Mothers

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Abstract

Background: Essential newborn care (ENC) focuses on the use of clean instruments to cut the umbilical cord, applying nothing to the cord, immediate drying (within five minutes) keeping the baby warm, delaying bathing to 72 hours after birth, and initiating breastfeeding within 1 hour of delivery. In rural area, home delivery without presence of skilled birth attendants resulted in many harmful traditional practices applied to the newborn baby by mothers and grandmothers.

Objectives: This cross-sectional study was carried out among rural mothers to assess the level of practice of Essential Newborn Care.

Methods: A total of three hundred and fifty-four rural postnatal mothers were purposively selected for the study. Rural mothers were interviewed with a pre-tested semi-structured questionnaire and an observational check list was also used.

Results: The mean age of the mothers was 22.14 ±3.27 years where 33.1% were illiterate and 83.3% were house wives. One fifth of the mothers were primi-gravida. Majority of the respondents (76.3%) had taken Antenatal care visit,48.3% delivered their children at home, 70.9% had normal delivery.76.0% washed the cord with clean water and soap. Immediately after delivery, 76.0% mothers kept their baby warmth by wrapping with dry cloth, 67.8%baby nursed in the same room and19.2% kept baby in skin to skin contact to maintain thermoregulation. 65.3%did not give anything to their child except breast milk. Majority of the mothers (53.7%) had adequate practice regarding ENC.

Conclusions: Awareness on kangaroo mother care should be established by community health workers for better thermoregulation and mothers should be encouraged for immediate and exclusive breastfeeding.

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Introduction

The birth of the baby represents a sudden transition from the intrauterine life to the external environment. The time immediately after the birth of the baby, is critical for newborn. Care practices immediately after delivery play a major role in causing neonatal morbidities and mortalities.[1]

Great efforts have been made to improve the health of children around the world over the past few decades, with some notable successes. Yet, achievements have not been as expected and child mortality rates are still high. Globally, an estimated 2.5 million newborns die in the first month of life, approximately 7000 every day in 2017. Currently, an estimated 18 neonatal deaths per 1000 live births occur during the neonatal period. More than 70% of these early neonatal deaths were due to conditions that could be prevented or treated with access to simple and affordable interventions.[2]

Essential newborn care (ENC), defined as care provided soon after birth, is critical in improving neonatal survival.[3] ENC practices at or immediately after birth include newborns receiving hygienic cord care during delivery to prevent infection, adequate thermal protection after delivery via delayed bathing, immediate drying and wrapping and skin-to-skin contact to prevent hypothermia and immediate breastfeeding because of the many benefits including colostrum.[4]

Traditionally, mothers are the caregiver for children irrespective of education, income and social class differences. It is evidenced by several studies that mothers have average to poor knowledge on newborn care.[5] This poor awareness among mothers can lead to unsuccessful results in terms of care giving. A number of research studies show that home visits by providers trained to deliver simple, effective interventions can improve key newborn care practices, care-seeking and, in high mortality settings, reduce newborn mortality.[6,7]

The National Neonatal Health Strategy and Guidelines for Bangladesh recommend a set of essential newborn care practices.[8] Essential newborn care focuses on the use of clean instruments to cut the umbilical cord, applying nothing to the cord, immediate drying (within five minutes) keeping the baby warm, delaying bathing to 72 hours after birth, and initiating breastfeeding within 1 hour of delivery. Bangladesh Demographic and Health Survey 2014 suggests that, overall, only 6 percent of newborns receive all the essential newborn care practices.[9]

Providing optimal care will greatly improve the survival of infants.[10]Majority of the neonatal deaths could be prevented through simple and cost-effective essential newborn care interventions both in the community and health facilities. The essential newborn care is focused on prevention of infection, thermal protection, resuscitation of newborn with asphyxia, early and exclusive breastfeeding, care for the low-birth weight babies, and identification and appropriate referral of sick neonates.[11]

The present study had been designed to assess the level of practice of Essential Newborn Care among rural mothers. This information would be useful for policy makers for designing interventional programs which would reduce the morbidity and mortality of newborn of Bangladesh.

Methods

This was a cross sectional study conducted from 1st January 2019 to 31st December 2019 in Panchagarh district. Data were collected from several villages of Atwari and Boda Upazila of Panchagarh district of the Rangpur division in Northern Bangladesh. A total of

three hundred and fifty-four rural postnatal mothers (the first six weeks after child birth) were purposively selected for the study. Mothers having infants who were critically ill were excluded from the study.
A semi-structured interviewer-administered questionnaire was used to collect data. An observational check list was also used, where baby's appearance, skin, naval area, sign of BCG vaccination and eye were observed. Data was collected by face to face interview in Bangla. The statistical analysis was done by using SPSS (Statistical Package for Social Science) version 25 software.

At the beginning, approval was obtained from the ethical committee of NIPSOM, under the Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh. Then informed written consent was obtained from participants after informing about the purpose of the study. Each respondent was interviewed separately and their privacy and confidentiality was maintained strictly.

Results

The mean age of rural mothers was 22.14 ±3.27 years which ranged from 17-30 years where53.4% of the rural mothers were from 20-24 years' age group others were from up to 19 years (24.0%) and 25 to 30 years (22.6%) age group. Among the rural mothers, 33.1% were illiterate. Out of 354rural mothers, 83.3% were house wives and 16.7% were service holders. Near about one fourth of the rural mothers (26.8%) had 3-4, 38.1% had 5-6 members in the family and 35.1% had >6members in the family. Monthly family income of the rural mothers was 15906.78 ±7780.98 taka. Most (80.2%) mothers were multiparous. Majority (59.6%) of the children were female and rests were male (40.4%). The mean age of the children was 22.59 ±11.73 days which ranged from 1-42 days where 44.0% children were from 1-21days' age group (Table I).

Out of the 354 rural mothers, 76.3% had taken ANC visit and 48.3% delivered their children at home. Mode of delivery status showed that 70.9% rural mothers had normal delivery. Postnatal care (PNC) was taken by 56.5% rural mothers (Table II).

When the umbilical cord was soiled 76.0% washed the cord with clean water and soap, dry thoroughly and76.0%rural motherskept their baby warmth by wrapping with dry cloth. 67.8% of the baby was nursed in same room with mothers. However, 19.2% mothers kept baby in skin to skin contact to maintain thermoregulation. First birth was given by 27.7% mothers after 24 hours of birth. Colostrum was given by 97.2% mothers, 30.5% mothers had started breast feeding immediately after birth and 65.3%rural mothers did not give anything to their child other than breast milk (Table III).

While observing the babies it was found that 75.4% babies looked healthy, 70.1% had normal skin tone, 262 (74.0%) had clean naval area, 63.0% were BCG given babies and 81.1% had clean eyes (Table IV).

Level of practice of rural mothers regarding essential new born care showed that 53.7% had adequate practice while 46.3%rural mothers had inadequate practice (Figure 1).

Table I: Distribution of respondents by socio-demographic status and child' particulars

Criteria	Frequency (f)	Percentage (%)
Age (in years)		
Up to 19	85	24.0
20-24	189	53.4
25-30	80	22.6
Mean ±SD: 22.14 ±3.27 years (Minimum: 17 years, Maximum: 30 years)		
Educational status of the respondents		
Illiterate	117	33.1
Up to primary	67	18.9
Up to SSC	92	26.0
HSC and above	78	22.1
Educational status of the husbands		
Illiterate	58	16.4
Up to primary	68	19.2
Up to SSC	86	24.3
HSC and above	142	40.1
Occupational status of the respondents		
House wife	295	83.3
Service holder	59	16.7
No. of family member		
3-4	95	26.8
5-6	135	38.1
>6	124	35.1
Monthly family income (in taka)		
Up to 10000	92	16.1
11000 to 20000	196	42.4
> 20000	66	25.7
Mean ±SD: 15906.78 ±7780.98 TK (Minimum: 4000 TK, Maximum: 40000 TK)		
Parity		
Primiparous	70	19.8
Multiparous	284	80.2
Sex of the child		
Girl	211	59.6
Boy	143	40.4
Age of child (in days)		
1-21	156	44.0
22-28	71	20.1
>28	127	35.9
Mean ±SD: 22.59 ±11.73 days (Minimum: 1 days, Maximum: 42 days)		

Table II: Distribution of respondents by reproductive and maternal healthcare utilization

Criteria	Frequency (f)	Percentage (%)
Ante Natal Care (ANC)		
Not taken	84	23.7
Taken	270	76.3
Place of delivery		
Home	171	48.3
Government hospital	95	26.8
Private hospital	88	24.9
Mode of delivery		
Normal delivery	251	70.9
Cesarean section (CS)	103	29.1
Postnatal care		
Taken	200	56.5
Not taken	154	43.5

Table III: Distribution of the respondents by practice regarding different components of ENC (n=354)

Criteria	Frequency (f)	Percentage (%)
Wash the umbilical cord with clean water and soap, dry thoroughly when it is soiled	269	76.0
Keep baby warmth by wrapping dry cloth	269	76.0
Baby nursed in same room with mother	240	67.8
Keep baby skin to skin contact (Kangaroo mother care)immediately after delivery	68	19.2
Give first bath to baby after 24 hours of birth	98	27.7
Colostrum given	344	97.2
Start breast feeding immediately after birth	108	30.5
Do not give anything to your child other than breast milk	231	65.3

Table IV: Distribution of the respondents by observational fact (n=354)

Observation	Frequency (f)	Percentage (%)
Appearance		
Healthy looking	267	75.4
Ill-looking	87	24.6
Skin		
Normal	248	70.1
Rough/ infected	106	29.9
Navel area		
Clean	262	74.0
Not clean	92	26.0
BCG vaccination		
Give	223	63.0
Not given	131	37.0
Eye		
Clean	287	81.1
Not clean	67	18.9

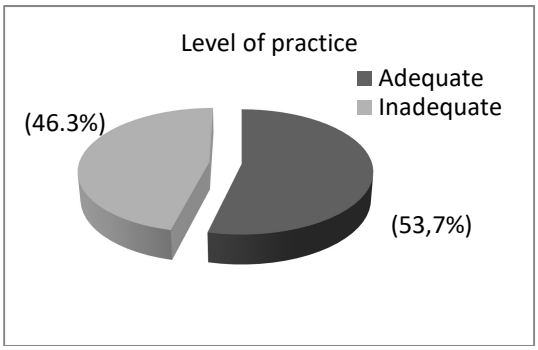

Figure 1. Distribution of respondents by level of practice regarding essential new born care (n=354)

Level of practice was not associated by age of mothers (p=0.101), educational status of mothers (p=0.646), occupational status of the mothers (p=0.505), and monthly family income (p=0.348). Mothers who had family members more than six had significantly more inadequate practice than others (p<0.001). Inadequate practice was found more among mothers who delivered their babies in private hospitals (p=0.020) (Table V).

Table V: Association of level of practice with socio-demographic variables

Socio-demographic variables	Level of practice		p value
	Inadequate	Adequate	
Age of the respondents (in years)			
Up to 19	46 (54.1)	39 (45.9)	
20-24	88 (46.6)	101 (53.4)	p=0.101
25-30	30 (37.5)	50 (62.5)	
Educational status of the respondents			
Illiterate	49 (41.9)	68 (58.1)	
Primary	33 (49.3)	34 (50.7)	p=0.646
Secondary	46 (50.0)	46 (50.0)	
Above secondary	36 (46.2)	42 (53.8)	
Occupational status of the respondents			
House wives	139 (47.1)	156 (52.9)	p=0.505
Others	25 (42.4)	34 (57.6)	
No. of family members			
3-4	46 (48.4)	49 (51.6)	p<0.001
5-6	45 (33.3)	90 (66.7)	
>6	73 (58.9)	51 (41.1)	
Monthly family income (in taka)			
Up to 10000	48 (52.2)	44 (47.8)	p=0.348
11000-20000	89 (45.4)	107 (54.6)	
>20000	27 (40.9)	39 (59.1)	
Place of delivery			
Home	83 (48.5)	88 (51.5)	p=0.020
Government hospital	33 (34.7)	62 (65.3)	
Private hospital	48 (54.5)	40 (45.5)	

Discussion

Essential newborn care (ENC) is a set of measures every newborn baby requires regardless of where it is born or its size. Components of ENC are proven interventions to reduce the illness and deaths of the newborn.[12] This cross sectional study was carried out among 354 rural mothers to assess the level of practice of ENC.

Newborn cord care practices may directly contribute to infections, which account for a large proportion of the 4 million annual global neonatal deaths.[13]The practice of cord care of the rural mothers were quite satisfactory as majority of the mothers (76.0%) washed the cord with clean water and soap, dry thoroughly when soiled. However, Unhygienic cord care practices were prevalent in Sylhet district of Bangladesh.[13] According to UNICEF reports, Sylhet division has the lowest coverage of PNC (42.0%) among all the divisions of Bangladesh.[14] Therefore, the discrepancy of result was not surprising.

Maintaining a neutral thermal environment is one of the key physiologic challenges that a newborn must face after delivery. Thermal care is central to reducing morbidity and mortality in newborns.[15] To maintain thermoregulation, majority of the mothers (76.0%) kept their baby warmth by wrapping with dry cloth. This is a common practice of Bangladesh to wrap the immediately after birth with cloth. Similar findings were presented in the study conducted in Sudan and Ethiopia.[16,17] However, kangaroo mother care (skin to skin contact) was maintained only by one fifth of the mothers. Crowe et al. analyzed the data of randomized controlled trials regarding ENC practice in Bangladesh, Eastern India and Nepal and reported that substantial improvement was observed in Bangladesh in thermal care except skin to skin contact.[18] In Sudan, one third of the mothers practiced skin to skin contact after delivery.[16]

It is important for the mother to know that the first bath to the new born should be given after 24 hours because new born acclimatizes the temperature changes from womb of mother and outside environment during this period any sudden temperature change may cause hypothermia to the neonate and would also be hazardous for the delicate skin.[1] Majority of the mothers (72.3%) gave first bath to baby before 24 hours of birth. The reason for behind this practice is the belief that the blood/fluid/vernix which stays on newborn's skin after birth is impure and has to be removed thoroughly.

Most of the rural mothers(97.2%) gave colostrum to their baby which was much higher than Ethiopia.[19] Near about one third of the mothers (30.5%) start breast feeding immediately after birth which was much lower than the study conducted in Bangladesh.[20] The study of Kim & Singh represents the data of whole Bangladesh while the present study was conducted in few villages of Bangladesh.

Majority of the mothers (65.3%) did not give anything to their child other than breast milk which was consistent with another study.[19]

Among the respondents, 63.0% were BCG given babies. It is best for child to have the vaccine within a few days of being born, however this was not maintained. When mothers were asked about this issue, they replied that the health personnel advised them to give BCG with OPV at 42 days of life.

Out of the 354 rural mothers, majority (53.7%) had adequate practice regarding essential new born care. Different study showed different findings in this matter. One study found low practice level among post-

natal mothers.[20] In Ethiopia, 38.4% mothers had good practice while in India, 85.0% mothers found to have good practice.[19,21] This difference could be due to the extensive work of health extension workers and various health care institutions in awareness creation on ENC in Bangladesh.

Practice regarding ENC depends on several factors. Study conducted in Ethiopia reported that factors such as mothers receiving antenatal care, attending pregnant mother's meetings, receiving immediate postnatal care, wealth index, whether a complication was faced during delivery and overall knowledge of mothers were statistically significantly associated with practice.[19]

Another study conducted in Ethiopia reported that newborn care practice was positively associated with those mothers who were educated, took ANC and PNC, had good knowledge of newborn care and had good knowledge of newborn danger signs.[17]Study conducted in India reported that age of mother was significantly associated with level of practices.[21]Study performed in Pakistan found that low monthly family income and maternal education level were associated with inadequate ENC practice.[21] The present study found that ENC practice was significantly associated with number of family members and place of delivery. Mothers who had family members more than 6 had more inadequate practice than others. When there is more members in family, mothers has to do more household chores. Besides, most of the mothers of the present study was housewives, they had no other alternatives besides helping family members. For this they failed to practice ENC adequately.[22]

Mothers who had delivered their babies in Government hospitals had more adequate practice than others. This result is a reflection of the hard work of the Government of Bangladesh to improve the maternal and neonatal health condition of Bangladesh. However, mothers who had delivered their babies in private hospitals had more inadequate practice than others. This might raise a question about the service of private hospitals in those areas.

Strength and limitations of the study

As this study was conducted at the community level, it has the opportunity to collect the data at grass root level. But the limitation of this study was that respondents might be subjected to recall bias because themothers failed to remember what they did for their infant in the early neonatal period. The studymight not show a cause and effect relationship because the study design was cross-sectional.

Conclusion

Majority of the mothers had adequate practice regarding ENC while less than half had inadequate practice. Mothers who had family members >6and delivered their babies in private hospitals had significantly more inadequate practice than others. Special emphasis should be given to improve thermal care by Kangaroo mother care for the newborn and to encourage immediate and exclusive breastfeeding. Post Natal Care service should be strengthened.

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