

Knowledge and attitude of essential newborn care among postnatal mothers in Bangladesh

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Abstract

Purpose – Neonatal mortality rate is 24 deaths per 1,000 live births in Bangladesh and most of them die during early neonatal period. The purpose of this paper is to assess the knowledge and attitude of neonatal care practices among postnatal mothers in a tertiary care hospital in order to provide a basis for the development of strategies to improve further.

Design/methodology/approach – A cross-sectional study was carried out in the Dhaka Medical College Hospital, Bangladesh using a convenient sampling technique. In total 211 postnatal mothers were interviewed using a structured questionnaire and χ^2 test was used to analyze the data.

Findings – Among mothers, 37.9 percent were aged between 16–20 years; 16.1 percent had no institutional education; 55 percent were primipara and only 26.5 percent had attended antenatal visit for more than four times. Mothers had apparently good knowledge and attitude about thermoregulation, early initiation of breast-feeding, importance of providing colostrum to the newborn, exclusive breast-feeding (EBF) up to six months of age and immunization at birth. However, this study identified knowledge gap about cord care, eye care, first bathing and hygiene practices. Overall, only a small proportion of respondents had good level of knowledge (37 percent) and attitude (47.4 percent) on newborn care. Highly significant statistical association was found between the knowledge, attitude level and socio-demographic characteristics of respondents. Knowledge and attitude were strongly associated as well.

Research limitations/implications – There is scope for improvement by providing health education to antenatal and postnatal mothers. Therefore, implementation of the guidelines outlined in the Maternal and Child Handbook (MCH) is highly recommended.

Originality/value – There is scope for improvement by providing health education to antenatal and postnatal mothers. Therefore, implementation of the guidelines outlined in the MCH is highly recommended to enhance the knowledge and attitude on newborn care among postnatal mothers.

Keywords Neonatal care, Postnatal mothers, Knowledge-Attitude-Practice (KAP)

Paper type Research paper

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The authors would like to convey their gratitude to the doctors, nurses and respective staff in the Department of Obstetrics and Gynecology, Dhaka Medical College Hospital, Bangladesh for their assistance in the whole data collection procedure. The two research assistants are also appreciated for their diligence with data collection. The authors also thank the respondents for their contribution toward the success of this study.



Introduction

Neonatal mortality contributes to 45 percent of under-five deaths globally[1] with prematurity considered as the primary reason. Furthermore, first 24 hours of life is the most vulnerable regarding neonatal deaths[2]. A combination of factors is responsible for these deaths including limited health care access, delayed recognition of complications, delayed care seeking and inadequate antenatal, intrapartum and postnatal care[3, 4].

In Bangladesh, neonatal mortality rate declined gradually from 93 deaths per 1,000 live births in 1967[5] to 24 deaths per 1,000 live births in 2016[6]. Postnatal care rate is very negligible, only 22.6 percent at present[7]. It is essential to improve postnatal care for both mothers and their children to reduce this neonatal mortality rate further since most of the neonatal deaths are preventable by practicing effective measures at birth as well as during the first week of life. In this regard, essential newborn care (ENC) is a comprehensive strategy designed to improve the health of newborns through interventions before conception, during pregnancy and soon after birth, and in the postnatal period. It is a set of recommendations outlined by World Health Organization (WHO)[8] which includes thermoregulation, clean delivery and cord care, initiation of breastfeeding, immunization, eye care, recognition of danger signs, care of the preterm/ low birth weight infant and management of newborn illnesses.

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[9, 10]. In India, a similar study reveals that mothers have inadequate knowledge in areas of umbilical cord care, thermal care and vaccine preventable diseases[11]. 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[12, 13]. Bangladesh Demographic and Health Survey 2014 suggests that, overall, only 6 percent of newborns receive all the essential newborn care practices[14]. Therefore, the purpose of this study was to assess the contemporary knowledge and attitude regarding the essential newborn care practices to intervene and educate mothers in future for proper practices and to enable the health planners and policymakers looking into this important issue targeting different demographic factors.

Methodology

A hospital-based cross-sectional study was conducted among postnatal mothers admitted in the postnatal ward at Dhaka Medical College Hospital between October 2014 and March 2015. In total, 211 mothers, based on their sound mental status, registration in the record and willingness to participate, were included in the study. Postnatal mothers who were extremely sick, non-responsive or lost their baby were excluded. Purposive sampling technique was used to select informed and consenting mothers following the hospital record. In addition, sample size for this study is determined by following the standard formula ($n = z^2pq/d^2$) to reach a universal sampling size[15]. At 95 percent confidence interval, the desired sample size reached at 385, however, due to time and resource constraint, 211 patients were chosen randomly meeting inclusion criteria.

Researchers collected data using a structured questionnaire through face-to-face interview. Nevertheless, information on mothers' socio-demographic status, antenatal and postnatal period and knowledge, attitude of newborn care practices were recorded following standard protocol. Moreover, the data were analyzed using the SPSS statistical software version 16.0. In addition to that, knowledge and attitude were measured using a five-point Likert scale. General information was analyzed by descriptive statistics. χ^2 test was used for inferential statistics where statistical significance for all analyses was achieved at 95 % confidence interval.

Ethical Review Committee for Human Research of the American International University, Bangladesh duly reviewed and approved the submitted ethical considerations

for this research on October 1, 2014. Furthermore, authority of Dhaka Medical College and Hospital, Bangladesh kindly permitted to conduct the study. The data set was secured and the confidentiality of the person as well as information was maintained.

Results

The age of mothers ranged from 15–40 years with 37 percent of them between 16 and 20 years. About 16 percent had no institutional education and only 4.3 percent went to university. Moreover, majority of the mothers were homemakers living in urban area. In addition to that, most of the mothers (39.8 percent) belonged to families with average monthly family income ranging from 10,001–15,000 BDT (USD = 80.54 BDT) and hailed from nuclear families. In this study, a little more than half of the mothers were primipara, however, the recommendation of at least four antenatal checkups was achieved by 26.5 percent only.

Majority of mothers knew about thermoregulation (70.6 percent), baby’s first bath (71.6 percent) and cord care (72.5 percent). However, only 8.1 percent knew about Kangaroo method for thermoregulation and 35.1 percent had the right knowledge about the care of umbilical stamp. The responses of the mothers about the methods to maintain the normal body temperature and care of umbilical cord stamp are depicted in Figures 1 and 2, respectively.

While assessed on hygiene practice, majority of mothers were aware of hand hygiene before breastfeeding (46 percent) and after diaper care (42.7 percent). In contrast, awareness was poor

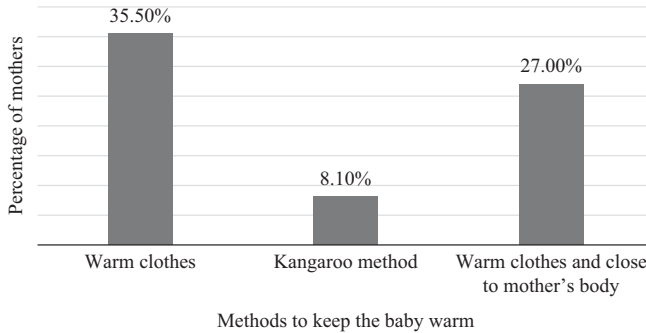


Figure 1. Knowledge about the methods to keep the baby warm

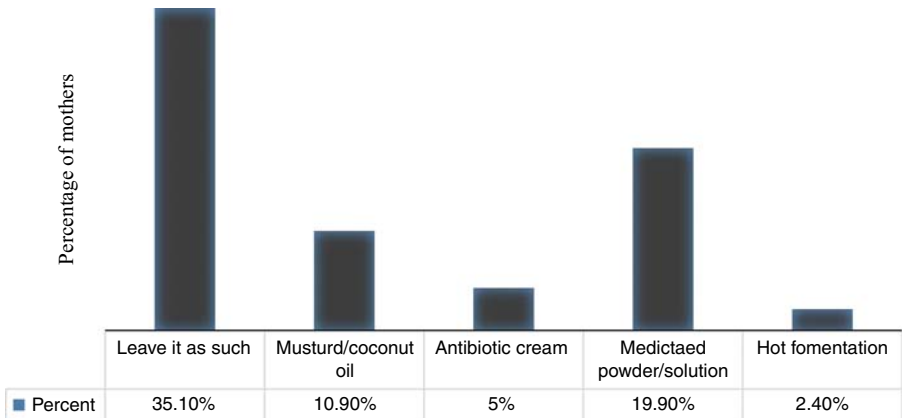


Figure 2. Knowledge regarding care of umbilical cord stump

(24.2 percent) about keeping the baby clean by whole bath. Most of the mothers (58.3 percent) agreed that newborn should be fed with colostrum knowing the natural benefits of it and exclusive breast feeding (EBF) should be given up to six months of age (59.7 percent). However, only 39.3 percent mothers agreed on initiating breastfeeding within an hour of childbirth and 46 percent agreed that pre-lacteal feeds should not be given to baby. In addition, knowledge about burping after breastfeeding was also poor (31.3 percent). In Table I, it can be seen that most of the mothers had poor to moderate knowledge; whereas only 37 percent of them have good knowledge on overall essential newborn care practices.

Table II shows the proportion of mothers agreeing or disagreeing various statements about their attitude on newborn care. Majority of mother had no idea that instillation of oil in the nostrils and ears and oil baths of newborns can cause long-term pulmonary dysfunction.

Attitude toward danger signs of newborn is shown in Table III. It is elicited that most of the mothers had no idea about sepsis, its cause and management. Only 47 percent mothers had overall good attitude to newborn care practices as demonstrated in Table I.

χ^2 test was used to identify the factors associated with maternal knowledge and attitude on newborn care. Maternal knowledge and attitude was significantly associated ($p < 0.001$) with each other. In addition to that, general characteristics such as maternal age, educational level, occupation and average monthly income of the family were significantly associated with knowledge and attitude (Tables IV and V).

Discussion

In this study, only a small proportion of respondents had good level of knowledge and attitude on newborn care. The findings were supported by a survey study conducted in 2006[16] which reveals that mother's knowledge in most of the studied items about newborn care practices is within satisfactory level except breastfeeding. However, another study in India[17] reveals

Table I.
Distribution of respondents by level of knowledge and attitude

Level	Knowledge		Attitude	
	Frequency	Percentage	Frequency	Percentage
Average (41–60%)	24	11.3	9	4.3
Good (61–80%)	109	51.7	102	48.3
Excellent (above 80%)	78	37.0	100	47.4

Note: n = 211

Table II.
Distribution of respondents by attitude to newborn care

Statements	Strongly agree (%)	Agree (%)	Neither agree nor disagree (%)	Disagree (%)	Strongly disagree (%)
	Hospital delivery is good for both baby and mother	55.9	32.7	2.4	2.8
Maintaining the normal body temperature is extremely important for newborn	39.8	41.7	14.2	0.5	3.8
Instillation of oil in the nostrils and ears and oil baths of newborns can cause long term pulmonary dysfunction	12.3	14.2	46.0	18.0	9.5
Babies should not be bathed in cold water	48.3	32.2	12.8	4.7	1.9
Breastfeeding should be done at both day and night	37.9	39.3	10.9	6.2	5.7
Dirty umbilical cord can cause infection	47.4	31.3	17.5	0.9	2.8
Vaccines are not harmful to baby	56.7	29.4	9.0	2.4	2.4

Note: n = 211

Table III.
Distribution of
respondents by
attitude to danger
signs in newborn

Statements	Strongly Agree (%)	Agree (%)	Neither agree nor disagree (%)	Disagree (%)	Strongly disagree (%)
Yellowish coloration of eyes, palms and soles	36.5	46.0	10.4	4.7	2.7
Umbilicus red, discharging pus	45.0	41.7	8.5	3.3	1.4
Baby not breastfeeding	35.5	38.4	15.6	5.7	4.7
Convulsion	51.7	39.8	7.1	1.4	0.0
Difficulty in breathing	64.9	34.1	0.5	0.5	0.0
Baby hot to touch	37.0	46.4	10.9	5.7	0.0
Baby cold to touch	35.1	37.0	23.2	4.3	0.5
Abdominal distension	43.6	43.6	11.4	1.4	0.0
Diarrhea	57.8	40.3	0.5	1.4	0.0
Vomiting	47.4	41.2	7.6	3.8	0.0
Cries excessively	30.8	39.8	20.9	3.8	4.7

Note: $n = 211$

Table IV.
Statistically
significant association
between socio-
demographic factors
and maternal
knowledge on
newborn care

Independent variables	Levels of knowledge						p -value
	Poor		Moderate		Good		
	Frequency	Percent	Frequency	Percent	Frequency	Percent	
Age							0.001*
Up to 15	3	12.5	5	4.6	2	2.6	
16–20	4	16.7	41	37.6	35	44.9	
21–25	16	66.7	36	33.0	16	20.5	
26–30	1	4.2	21	19.3	19	24.4	
> 30	0	0.0	6	5.5	6	7.7	
Educational level							0.001*
No institutional background	10	41.7	23	21.1	1	1.3	
Can read or write	6	25.0	25	22.9	9	11.5	
Up to class ten	6	25.0	41	37.6	13	16.7	
SSC pass	2	8.3	12	11.0	25	32.1	
HSC pass	0	0.0	6	5.5	23	29.5	
Degree/honors	0	0.0	2	1.8	7	9.0	
Occupation							0.004*
Housewife	24	100.0	102	93.6	63	80.8	
Service holder	0	0.0	7	6.4	15	19.2	
Average monthly income							0.001*
Up to 5,000	10	41.7	24	22.0	1	1.3	
5,001–10,000	8	33.3	33	30.3	24	30.8	
10,001–15,000	5	20.8	42	38.5	37	47.4	
> 15,001	1	4.2	10	9.2	16	20.5	

Note: *Significance level at $\alpha = 0.05$

dissimilar findings that majority of postnatal mothers has excellent knowledge on newborn care practices.

Maintaining normal body temperature is crucial in newborns due to their larger body surface area. A study in India proves that thermal care, a component of essential newborn care, gets neglected even though pregnant mothers have access to a trained birth attendant for delivery at home[18]. Bathing the newborns immediately after birth is still a common practice in Bangladesh, particularly in rural areas. This puts the newborn at risk of hypothermia, which gets worse with the lack of adequate drying and warm clothes. This practice is due to the consequence of the belief that the blood/fluid/vernix on newborn's skin at birth is impure. In the present study, 71 percent mothers knew about bathing the newborn

Table V.
Statistically significant association between socio-demographic factors and maternal attitude on newborn care

Independent variables	Levels of attitude						p-value
	Poor		Moderate		Good		
	Frequency	Percent	Frequency	Percent	Frequency	Percent	
Age							0.021*
Up to 15	0	0.0	8	7.8	2	2.0	
16–20	3	33.3	37	36.3	40	40.0	
21–25	4	44.4	41	40.2	23	23.0	
26–30	2	22.2	11	10.8	28	28.0	
> 30	0	0.0	5	4.9	7	7.0	
Educational level							0.001*
No institutional background	6	66.7	21	20.6	7	7.0	
Can read or write	3	33.3	26	25.5	11	11.0	
Up to class ten	0	0.0	37	36.3	23	23.0	
SSC pass	0	0.0	10	9.8	29	29.0	
HSC pass	0	0.0	5	4.9	24	24.0	
Degree/honors	0	0.0	3	2.9	6	6.0	
Occupation							0.001*
Housewife	9	100.0	99	97.1	81	81.0	
Service holder	0	0.0	3	2.9	19	19.0	
Average monthly income							0.001*
Up to 5,000	6	66.7	22	21.6	7	7.0	
5,001–10,000	3	33.3	32	31.4	30	30.0	
10,001–15,000	0	0.0	40	39.2	44	44.4	
> 15,001	0	0.0	8	7.8	19	19.0	

Note: *Significance level at $\alpha = 0.05$

with warm water, however, the timing of first bath was not clear to most of them. This finding was in contrast to a study done in rural Uganda where 48 percent of the mothers practices optimal thermal care[19]. Mothers in the present study also had a good idea in terms of maintaining body temperature with warm clothes, although only 8 percent of them were aware of Kangaroo (skin-to-skin contact) as a method of thermoregulation. This was due to inadequate dissemination of information on thermoregulation by the health care providers during both antenatal and postnatal periods. Therefore, more effort is required for educating these women to prevent hypothermia in newborns.

Even though the WHO always stresses improved cord care practices since it can function as the entry point for infections, guidelines are seldom followed in many rural areas where untrained birth attendants conduct deliveries. Since this study was done in a hospital setting and the initial part of cord care was taken care of by the hospital staff, we focused on the knowledge and attitude of postnatal mothers toward the care of cord stump. WHO recommends dry cord care where nothing is placed on cord stump unless indicated[20]. Studies done in developing countries suggest that mothers are applying substances like mustard oil, turmeric, cow dung, antiseptic lotion on the cord stump[21]. In our study, only 35 percent of mothers responded that they would leave the cord stump as such, although majority of them agreed that dirty umbilical stamp could lead to infection. This shows the gap in the education provided to them despite being taken care of in a tertiary center.

Breastfeeding knowledge among mothers was encouraging with most mothers aware of essential breastfeeding, initiation of breastfeeding within one hour of birth, importance of colostrum, EBF until six months of age and not giving pre-lacteal feed. These findings suggest great emphasis by healthcare providers on breastfeeding during antenatal care. However, awareness level on breastfeeding on demand and burping practices after each feed is poor. It might be due to inadequate postnatal visit. While all pregnant women should attend ANC at the earliest time possible and more than four visits before delivery, postnatal

visits are necessary as well in terms of adequate newborn care. Furthermore, the study revealed moderate knowledge on newborn's eye care and newborn's hygiene.

The attitude toward immunization among mothers in our study was moderate even though the expanded programme on immunization (EPI) in the country is pushing it diligently. Immunizations does not come under the essential newborn care practices, nevertheless, it is crucial that the mothers are imparted with the basic idea regarding immunization before they get discharged from hospital because several studies prove that better knowledge about the vaccines would improve the vaccine coverage[22, 23]. Although all the mothers in the present study were of the opinion those vaccines are essential, majority of them do not know about the vaccine preventable diseases. In addition, a few were concerned about development of fever following vaccination.

Upon asking about harmful practices in our study, about 27 percent mothers agreed that oil instillation in the nostrils is good for the baby. In contrast with this, a study in India suggests that 29 percent of patients with persistent pneumonia have a history of oil instillation in the nostrils[24]. Mothers have been practicing it under compulsion by elders in family because they believe that it protects their babies from cough and cold by clearing the nose and throat. Thus, the variations of the views of mothers about harmful practices revealed in this study might be due to influence by traditional practices and lack of dissemination of awareness by health care providers on the best practices.

Majority of the mothers were unaware of the general danger signs of newborn. Over 50 percent mothers consider breathing difficulty, distended abdomen and diarrhea as sign of danger. Rest of them has little awareness about the signs of sepsis, its cause and management. This inference was similar to another study conducted in African countries[25, 26]. In our study we found that practice of mothers in newborn are still lagging in some aspects like recognizing sick newborn, managing jaundice, feeding practices and hygiene care. All this practices have direct impact on neonatal health status. Hence to overcome this problem increasing overall educational status of mothers, providing proper health education to them regarding care of newborn, running baby friendly clinics and discouraging the unhealthy traditional beliefs are very important.

Conclusion

This study revealed that postnatal mothers were most knowledgeable about breastfeeding and hygiene practices for newborn. On the other hand, mothers were least knowledgeable about eye care, cord care, thermoregulation and immunization. These gaps are because of deep-rooted cultural and traditional beliefs as well as ignorance among caregivers. Significant association was found between socio-demographic factors and inadequate maternal knowledge and attitude on newborn care. Furthermore, knowledge and attitude were strongly associated. Therefore, to increase the practices, improving overall knowledge status of mothers, providing proper health education to them regarding care of newborn, running baby friendly clinics and discouraging the unhealthy traditional beliefs are very important. Implementation of the guidelines outlined in the Maternal and Child Health handbook is highly recommended in this regard. In addition, the health planners and policymakers should look into this important issue targeting different demographic factors. Measures should be taken to provide mother targeted education consists of nutritional education, personal hygiene and childrearing, immunization of newborn at birth. Furthermore, the researchers feel the urge to include other members of the family in child care process for improving the situation at a macro level. The current practice burdens mothers too much to take care of both their children and themselves. To deal with that, father of the children as well as grandparents or other caretakers need to be included in any training sessions or education process. Without including them in the system, the burden of the mothers could not be dealt with. It is also observed that the role of midwives are very

limited, whereas the health care staff of ministry of health can be trained as midwives and engaged in the process to enlighten the mothers as well as other family members to know and improve their knowledge and practice about child care for better result. Without engaging a well-trained midwives force and willing participation from the family members, the current situation would not be improved. Therefore, essential newborn care should be emphasized in pre-service and in-service nursing and midwifery education. Policy makers thus need to consider these initiatives. Further participatory action research is therefore proposed to explore these possibilities.

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