Newborn Care Practices among Urban Slum Population of Guwahati City, India

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ABSTRACT

BACKGROUND
Neonatal mortality is one of the most daunting health challenges faced by India. Newborn care is sub-optimal in the slums and the newborns here are victims of various malpractices endangering their health and survival. We wanted to study the existing newborn care practices in slums of Guwahati city and evaluate the various factors influencing them.

METHODS
A community-based cross-sectional study was conducted among 300 mothers having children below 12 months of age in the slums of Guwahati city, Assam from August 2018 to July 2019.

RESULTS
Out of 300 mothers interviewed, majority (63 %) had institutional deliveries and only 37 % of the mothers delivered at home. Out of 111 home deliveries, new blade was used in majority (82.88 %) for cutting the cord. Some material was applied to the cord stump like mustard oil, ash, vermilion, talcum powder etc. as customary practice in 68 % of home deliveries. Majority of the newborns (89 %) were wrapped with clean cloth immediately after birth. However, 59.33 % of the newborns were given first bath within the first day of birth. Majority of mothers (80.67 %) initiated breastfeeding within one hour of birth and 71.33 % of the newborns were given colostrum. However, pre lacteal feed was highly practised (59.33 %) in the study area.

CONCLUSIONS
All the domains in newborn care were not appropriately practised. These issues need to be addressed effectively through health education and counselling.

KEYWORDS
Neonatal Care, Cord Care, Breastfeeding, Home Delivery

BACKGROUND

Neonatal mortality is one of the most daunting health challenges faced by India. It is estimated that out of 3.9 million neonatal deaths that occur worldwide, almost 30 % occur in India.[1] According to National Family Health Survey - 3 (NFHS - 3) report, the current neonatal mortality rate (NMR) in India is 39 per 1000 live births, accounting for nearly 77 % of all infant deaths and nearly half of the under - five child deaths.[2] The major causes of the neonatal deaths are infections (sepsis, pneumonia, tetanus and diarrhoea), hypothermia, prematurity and birth asphyxia.[3] Many of these life - threatening conditions can be prevented or managed with simple technology, improved delivery care, and attention to the physiological needs of the newborn.[4] In recent decades although concerted efforts has been given by the government of India, still the enormous ongoing toll of neonatal deaths is very much alarming. This slow decline in India's neonatal mortality rate calls for better understanding of the main determinants of neonatal care, identifying needs and means for improving neonatal care.

One - third of India's urban population resides in slums and squatters and this is expected to rise.[5] The NMR among the poorest of the population is more than double the NMR of the richest - 60 versus 26 percent per 1000 live births.[6] Considering the poor socio - cultural environment of slums, newborns are highly vulnerable to this adverse environment. Hence, an understanding of current practices and various factors influencing newborn care practices is very much imperative for the survival and well-being of the newborns. Studies on newborn care practices in North East part of India are very few and not many studies have been done in slums of Guwahati city. So, the present study was undertaken to study the newborn care practices in the slum population and to study the various factors influencing them.

METHODS

A community - based cross - sectional study was conducted in the slums of Guwahati city, Assam from August 2018 to July 2019. The study population comprised of mothers having children below 12 months of age and residing permanently in the slums. Sample size was calculated considering P as percentage of exclusively breastfed infants according to NFHS - 3.[2] Applying the formula $4Pq / L,^2$ where P = 44.44 %, allowable error L = 6 %, with confidence interval of 95 %, the sample size was calculated as 274. Considering the non - response rate of 10 %, the total number of mothers to be interviewed was 300. For the selection of slums, the list of slums of Guwahati city has been obtained from Guwahati Municipal Corporation. There are total 90 slums in Guwahati city as per Guwahati Municipal Corporation (2009). Out of these 90 slums, 25 % of total slums i.e. 23 slums were selected using simple random sampling. Around 13 mothers from each of these selected 23 slums were taken for study. Within each slum, random sampling was used to select the first household and then subsequent houses were visited to get the required number of samples from each slum. The selected slums were visited, and the respondents were carefully briefed about the purpose of the study so as to get full co - operation in conducting the study. House to house visits were made till 300 respondents could be found in the selected areas. Interviews were conducted at the house of the respondents. Informed consent in the pre - designed consent form was taken from each respondent. A predesigned and protested pro - forma was used during data collection. Information on socio - demographic profile, place of delivery, antenatal check-ups and newborn care practices were taken. Family size was interpreted according to the census type in the present study. Socio - economic status was assessed by using modified Kuppuswamy Scale.

Statistical Analysis

Data collected on various aspect of the study was tabulated and subjected to statistical analysis. Data analytical procedures involved frequency distribution, cross tabulation and Chi square test, a p value of less than 0.05 was considered to be significant. Data were entered in MS Excel and analysed in Statistical Package for the Social Sciences software (SPSS version 25.0).

RESULTS

Socio - Demographic Profile	Number	Percentage
Age (in Years)		
15 - 19	8	2.67
20 - 29	214	71.33
30 - 39	75	25.00
> 39	3	1.00
Total	**300**	**100.00**
Religion		
Hindu	175	58.33
Islam	110	41.67
Education		
Non - literate	210	70.00
Up to Primary	69	23.00
Up to High School	13	4.33
Higher secondary and above	8	2.67
Types of Family		
Nuclear	194	64.66
Joint	106	35.34
Family size		
< 5	121	40.33
5 - 6	104	34.67
> 6	75	25.00
Socio - Economic Status		
I	--	-
II	21	7.00
III	49	16.33
IV	126	42.00
V	104	34.67
Occupation		
Homemaker	123	41.00
Daily wage earner	116	38.67
Part time worker	61	20.33
Table 1. Socio-Demographic Profile of Mothers		

ANC visits (n = 300)	Number	Percentage
Single visit	39	13.00
2 visits	60	20.00
≥ 3 visits	171	57.00
No ANC visit	30	10.00
Total	**300**	**100.00**
Place of Delivery		
Hospital	189	63.00
Home	111	37.00
Total	**300**	**100**
Table 2. Distribution of Mothers According to Antenatal Check-up Received, and Place of Delivery		

Newborn Care Practices	Number	Percent
Wrapping of Newborn with Clean Cloth Immediately after Birth		
Yes	267	89.00
No	33	11.00
Total	**300**	**100.00**
Time of first bath		
≤ 1 day	178	59.33
2 - 7 days	112	37.34
> 7 days	10	3.33
Total	**300**	**100.00**
In Case of Home Delivery, (n = 111)		
Materials used for Cord-cutting		
Clean blade	92	82.88
Old blade / knife / scissor etc.	11	9.91
Cannot specify	8	7.21
Total	**111**	**100.00**
Application to cord - stump		
Antiseptic	11	9.91
Mustard oil	38	34.23
Others (ash, vermilion, turmeric, talcum powder etc.)	27	24.32
None	35	31.53
Total	**111**	**100.00**
Time of Initiation of Breastfeeding		
≤ 1 hour	242	80.67
1 - 6 hours	17	5.67
6 - 24 hours	20	6.67
> 24 hours	21	7.00
Total	**300**	**100.00**
Feeding of Colostrum		
Yes	214	71.33
No	86	28.67
Total	**300**	**100.00**
Prelacteal feed		
Not Given	122	40.67
Given	178	59.33
Total	**300**	**100.00**
Table 3. Immediate Newborn Care Practices		

Socio - demographic profile of mothers is presented in Table 1. Out of 300 mothers interviewed, majority (71.33 %) belonged to the age group 20 - 29 years. Majority of the mothers were Hindus (58.33 %) followed by Muslims (41.67 %). Mothers of other religion were not encountered. Majority of the mothers (70 %) were found to be non - literate. Out of the 300 families studied, 194 (64.66 %) were found to be from nuclear families. Homemakers constituted 41 % of mothers followed by daily wage earners (38.67 %). Highest number of families (42 %) belonged to socio - economic group class IV followed by class V (34.67 %).

It was found in the present study that majority (90 %) of the mother's availed antenatal check-ups (Table 2). Out of them, majority (63.33 %) had three or more antenatal visits whereas only 14.44 % mothers had single antenatal

visit. However, 10 % of the mothers did not have any antenatal check-ups. It was seen that 63 % of mothers had delivered in the institution while 37 % of mothers delivered at home (Table 2). Among the home deliveries, 56.76 % of deliveries were conducted by untrained birth attendants.

Table 3 depicts the various newborn care practices that were prevalent in the study area. Out of 300 newborns, 89 % were wrapped with clean cloth immediately after birth. However, majority (59.33 %) of the newborns were given first bath within the first day of birth. Only in 3.33 % of cases, bath was delayed beyond 7 days. Out of the 111 home deliveries, it was seen that new blade was used in majority (82.88 %) for cutting the cord whereas old blades were used in 9.91 % of the cases. In 68.46 % of home deliveries, some material was applied to the cord stump like mustard oil, ash, vermilion, talcum powder etc as customary practice. In 9.91 % cases, antiseptic was applied. However, 31.53 % did not apply anything to the cord stump as is the standard practice. Majority of mothers (80.67 %) initiated breastfeeding within one hour of birth. Most common cause of delayed initiation of breastfeeding was cited as breast milk was not secreted (60.34 %). Caesarean delivery (18.97 %), elder's advice (12.07 %) were some of the other reasons cited by mothers. Colostrum was given to their newborns in majority (71 %). While eliciting the causes of discarding colostrum among those who discarded it, the leading reason was cited as being prohibited by elderly (56.98 %). Another 15 % of the mothers discarded colostrum as they were ignorant of its advantages. Pre lacteal feed was highly practiced (59.33 %) in the study area. It was given as customary practice in majority of the newborns (82.02 %) and honey was most widely used (45.51 %). Some other items like sugar solution (41.57 %), plain water (12.92 %) were also given.

The chi - square test was done to test whether newborn care practices had a significant relationship with ANC visits. A significant relation was found between thermal care, cord applicant and breast-feeding initiation with the number of ANC visits.

Newborn Care Practices	Number of ANC Visits		χ^2	P Value
	≥ 3 Visits	< 3 Visits		
Wrapping of newborns with clean cloth immediately after birth (n = 300)				
Yes (267)	161	106	9.593	0.0020
No (33)	10	23		
Materials used for cutting the cord in home deliveries (n = 111)				
New blade (92)			0.1330	0.7153
Old blade/others (11)	60	32		
*Could not be specified by 8.	6	5		
Material applied to cord stump in home deliveries (n = 111)				
Yes	20	56	18.404	0.0001
No	25	10		
Breast feeding initiation (n = 300)				
Within 1 hour (242)	152	90	16.034	0.001
> 1 hour (58)	19	39		
Feeding of Colostrum (n = 300)				
Given (214)	120	94	0.1457	0.702
Not given (86)	51	35		
Prelacteal feeds (n = 300)				
Given (178)	102	76	0.0164	0.898
Not given (122)	69	53		
Table 4. Relationship between Newborn Care Practices and Number of ANC Visits				

DISCUSSION

The present study has described a few essential newborn care practices in large sample of households in the slum populations where majority of the dwellers are illiterate and inhabit in adverse sociocultural environment. Newborn care in the study area seemed to be far from satisfactory and various unhealthy practices were found to be prevalent in the study area.

Inspire of various initiatives taken by the government, antenatal check-up coverage is still not achieved 100 % in the present study area. This study finding is in conformity with other studies[7,8] done in other parts of India. This could be due to poor motivation in utilizing the antenatal care services.

In the present study it is seen that 37 % of the mothers still delivered at home. Gupta P and her co - workers in their study in urban slums of Lucknow city, India also found that almost half (51.7 %) of the deliveries took place at home. [9] This needs to be addressed immediately so that institutional deliveries are scaled up by increasing their motivation and removing other hindering factors.

Clean blade or cord cutting material is one of the important components determining the survival of newborns. Cord cutting practices have been identified as risk factors for neonatal infection.[10] The encouraging finding of the present study was that new blade was used in majority (82.88 %) of the home deliveries for cutting the cord whereas old blades were used in only 9.91 % of the cases. Few other studies[8,] also represents the same pattern. However, Chowdhury and his associates in a study on newborn care in rural Bangalore in India reported that in 50 % of the home deliveries, household knife was used to cut the cord.[11]

The harmful practice of applying something over the cord stump was widely practiced among the home deliveries in the study area. This is in conformity with other studies done in similar background.[8,11] Deliveries by trained dais and use of Disposable delivery kit in case of home deliveries need to be put in practice in slum areas with strict supervision.

Newborns were wrapped with clean cloth immediately after birth in majority (89 %) of cases which is a key determinant in preventing neonatal hypothermia. This finding is consistent with previous studies[9,8] done in similar background. Bathing of the newborn within first day of birth is practised in 59 % of babies in the study area. This practice has to be discouraged by proper counselling of mothers and family members on importance of newborn thermal care. This also calls for immediate action from the Antenatal care providers. The practice of cleaning the neonate by giving bath was also reported by Bhakoo and Kumar in their study from North India.[12] However Das P and his associates in a study on rural West Bengal found that only 17.48 % of the newborn were given bath within 24 hours of birth which was less in comparison to the present study.[13]

The present study highlighted that majority of mothers (80.67 %) initiated breastfeeding within one hour of birth which is an encouraging finding. This finding from the present study is in conformity with recent studies from Nepal, Pakistan and Bangladesh which showed early breastfeeding initiation rates of 91 %, 73 % and more than 70 % respectively.[14] However in contrast to our study finding, Sinha babu A and his colleagues in a study on infant and young child feeding practices in West Bengal reported that only 13.6 % of the newborns were given breast feeding within 1 hour of birth.[15] While eliciting the reasons who delayed initiation of breastfeeding, majority of them cited more than one response. Different reasons cited were – breast milk was not secreted (60.34 %), Caesarean delivery (18.97 %) and elders' advice (12.07 %). Delayed initiation of breast feeding must be addressed by health education of mothers during antenatal check-ups. The elders of the family who have role in decision making also needs proper counselling emphasizing the advantages of early initiation.

The practice of feeding colostrum was high in the study area which is an encouraging observation. Among 29 % of the mothers who discarded colostrum, the foremost reason cited was being advised by elders (57 %). This observation definitely suggests the inclusion of elders in breastfeeding counselling so that wrong notions regarding colostrum can be removed.

The most discouraging observation is high prevalence of practice of pre lacteal feeding (59.33 %). This study finding is higher in comparison to previous studies.[16,14] This practice of pre lacteal feeding has to be addressed urgently and ANC visits should be effectively utilised to provide proper health education.

ANC has been identified as an important determinant for newborn care practices. The finding of significant relationship between ANC with thermal care, cord applicant and early breast-feeding initiation was in conformity with other studies. Sharan in his study found a positive association between antenatal care and cord care and early breastfeeding initiation, which indicates that if a woman receives ANC services, she is likely to get information on safe cord care and early breast feeding. Receiving more ANC visits enables a mother to adopt good newborn care practices.[17]

Certain limitations are bound to pop up in a cross - sectional study like this which involves recalling of past practices and behaviours. The study area comprised of largely illiterate population who could not specify certain information. A One - year recall period was taken to minimise recall bias and also to have sufficient sample size. Meticulous effort was taken to maintain the quality of the data.

In conclusion, although a few newborn care practices were correct and encouraging in the study area, yet many unhealthy neonatal practices were still found to be prevalent. This is high time to utilise ANC visits for counselling of mothers regarding neonatal care practices. For this, retraining and motivation of antenatal service providers is crucial. The present study revealed the influence of elders also in newborn care practices. These issues need to be focussed and strategies targeting these groups should be undertaken. Health education and IEC activities can help to mitigate the problem. More studies are needed in this regard to study the gaps for deficiencies in motivation for institutional deliveries.

CONCLUSIONS

Although a few newborn care practices were correct and encouraging in the study area, many unhealthy neonatal practices were still found to be prevalent. This is high time to utilise ANC visits for counselling of mothers regarding neonatal care practices. For this, retraining and motivation of antenatal service providers is crucial. The present study revealed the influence of elders in the newborn care practices. These issues need to be focussed and strategies targeting these groups should be undertaken. Health education and IEC activities can help to mitigate the problem. More studies are needed in this regard to study the gaps like deficiencies in motivation for institutional deliveries.

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