New Born Care Practices in a Resettlement Colony of Delhi

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Abstract

Background: Newborn death accounts for 40% of all deaths among the under five children. Most of the newborns are born and die at home in developing country. Newborn health intervention trials at the home and community is identified as one of the key strategy to prevent most newborn death.

Objectives: The study was conducted to assess the newborn care practices and the associated factors among the mothers of resettlement colony in Delhi.

Method: Cross sectional study was conducted among mothers of newborn in an urban slum of East Delhi. Systematic random sampling method was adopted to interview 360 mothers who had live newborns under 28 days old. The data was collected using a pretested, validated and semi structured questionnaire. Appropriate statistical tests were applied.

Results: Among 360 study participants, 206(57.2%) preferred home delivery and 154(42.7%) of deliveries was conducted by skilled birth attendant. 31.1% of newborns were dried immediately. The cord was cut after the delivery of placenta among 189(52.5%) of the newborns. 85.3% of mothers something applied on the cord. 18.1% of mothers discarded colostrum. 81.9% of newborns were given prelacteal feeding. Mothers literacy, birth order, no of antenatal visits, place of delivery were significantly associated with the newborn care practices.

Conclusion: It is observed that detrimental newborn care practices were more common than the beneficial practices in the study. Understanding newborn care practices at home and community level is essential to improve existing intervention to reduce neonatal mortality.

Keywords: Newborn care practices, neonatal mortality, thermal care, cord care, breast feeding, behavior change strategy.

Introduction

The newborn period is defined as the first 28 days of life which is exceptionally characterized by transition from intrauterine to extrauterine life. This phase of life has the highest risk of morbidity and mortality [1]. Newborn care immediately after birth is of immense importance for the proper growth and development of the baby[2]. It is reported that nearly 3 million babies die within 28 days of life [3] and a further 2.6 million stillbirths each year [4]. India contribution to the global burden of newborn deaths is higher when compared to that of maternal and under-5 deaths. India contributes 16% of global maternal death and 21% of under-5 deaths in which newborn mortality contributes to 27%. The inadequate newborn care practices immediately after the
delivery contribute to the important cause of morbidity and mortality among the newborns[5, 6-8]. Lack of quality antenatal care, unskilled attendant during labor, inadequate thermal and cord care, colostrum avoidance, delayed initiation of breastfeeding poses the main threat to newborn survival in India. Maternal literacy, socio-economic aspects of poverty, the health status of the mother, lack of decision making, self-autonomy, no or less antenatal and postnatal visits, the poor linkage between health centers and community were found to be an unforeseen cause of both maternal and neonatal mortality [1]. The most effective measure in saving newborn especially in developing countries is focusing on household and community level where most newborn death occurs[9]

Essential newborn care (ENC) is a set of measures every newborn baby requires regardless of where it is born or its size. It is designed to protect the newborn in adverse environmental condition and is a framework that should be applied immediately after birth, continued at least for the first seven days[5]. Components of ENC and neonatal resuscitation are proven interventions for reducing neonatal mortality rate and stillbirth rate[10-12] ENC begins during pregnancy- provision of iron/ folic acid supplements, tetanus toxoid immunization, early identification and management of high-risk pregnancy and maternal infection which has an influence on newborn health and survival. The important strategies of ENC comprises of (a) Basic preventive newborn care such as clean delivery practices, prevention of hypothermia, eye and cord care, early initiation and exclusive breastfeeding on demand (b) Early detection of problems or danger signs (with priority for sepsis and birth asphyxia) and appropriate referral and care seeking and (c) Treatment of key problems such as sepsis and birth asphyxia [10]

Since many births and neonatal deaths take place at home, away from the reach of skilled providers, innovative community-based approaches are instantly needed to bring substantial improvement in newborn survival in India. Hence it is not possible to sustain the whole ENC strategies at the community level but feasible interventions like tetanus toxoid immunization, skilled birth attendant, warming baby, clean cord care and breastfeeding have been identified as proven interventions to save newborn lives [8]. Understanding these practices at the domiciliary level can help in designing and improvising existing interventions to reduce neonatal morbidity and mortality [13]. Hence this study was carried out to assess the newborn care practices and the associated factors among the mothers of resettlement colony in Delhi.

Material and Method

A cross-sectional study was carried out among mothers of newborns residing at an urban slum of Delhi of East Delhi. Mothers who had live babies under 28 days old were included and babies with congenital malformation was excluded. Using the prevalence of early initiation of breastfeeding as 36.6% from a previous community-based study [6] conducted, the sample size was calculated to be 356. A total of 360 mothers were recruited for this study. The urban slum chosen was the field practice area of a tertiary care teaching hospital of Delhi. HMIS system has an updated list of newborns. The total population of the slum was 70501 and eligible couples comprised approximately 17.88% of the total population (i.e. n=12605). Systematic random sampling was done with every 5th house chosen and mothers with newborns were covered till sample size of 360 was arrived. As the births and deaths were regularly updated, there was no delay in carrying out the interviews.

A pretested, validated, semi-structured questionnaire in local language i.e. Hindi was used for data collection. The tool has four sections- sociodemographic details, antenatal care and delivery related services cum practices, newborn care practices, and feeding practices. The study tool was pretested with 40 mothers of neonates in a rural area and required changes had been incorporated.

The mothers recruited in the study were explained about the purpose of the study and were given a participant information sheet. The participants were interviewed at their doorsteps with the study tool.

Data entry and data analysis was done in Statistical Package for Social Sciences (SPSS IBM) version 21.0. Data validation checks were done for the data entered. Proportions and mean with standard deviation were calculated. Chi-square test was used to find a difference in proportions. A p value of <0.05 is considered significant. The study was approved by the institutional ethical committee. Confidentiality was secured at all phases of the study.

Results

The mean age of the mothers were 24.04 ± 3.69 years. Majority of the mothers were in the age group of
21-30 years. All the study participants delivered a single live baby. Among these 26.4% had given birth to first child whereas 11.7% mothers who had given birth to 5th or more child. The study included 220(61.1%) male and 140(38.9%), female babies. The sex ratio was calculated to be 637 girls born for every 1000 male babies.

Among the study participants, 113(31.4%) women were illiterate whereas 96(26.7%) women had primary level education followed 151(20.2%) women had the education of middle school and higher level. 73.1% of the participants were of the upper lower class. 54.7% of these belonged to the nuclear family. 52.8% belong to the Muslim religion and 44.2% to Hindu religion.

Out of 360 participants 11(3.05%) did not utilize antenatal services, 61(16.9%) had <3 ANC visits and 288(80%) had ≥3 ANC visits.(Fig 1) 197(56.44%) women consumed IFA tablets for ≥100 days while 17(4.9%) women did not receive it during their antenatal visits. Two doses of tetanus toxoid (TT) was given to 200(57.3%) women of which 54% were primigravida, 31% was the second gravida and 15% were the third gravida. On the other hand, 145(41.5%) mothers received a single dose of TT of which 68% were of ≥ 3 parity, 29% were of second parity and 3% were primigravidae. Mean estimated gestational age of the newborns was 37± 1.3 weeks.

Among the study participants, 206(57.2%) deliveries were conducted in the home. Only 154(42.7%) deliveries were conducted by the skilled birth attendant (doctor, nurse or Auxiliary Nurse Midwife (ANM)) and 206(57.3%) deliveries were conducted by an unskilled birth attendant (untrained traditional birth attendants (dais), family members or neighbors). (Fig. 2) Birth weight was recorded for 252(70%) newborns of which 18.5% of newborns were below 2500gms and 81.5% were above 2500gms.
The mothers were questioned regarding the time of drying of the baby after birth, out of which 190 (52.8%) baby was dried after delivery of the placenta and 112 (31.1%) was immediately after birth and 47 (13.1%) did not know when the baby was dried. 48 (13.3%) baby was kept skin to skin contact with the mother after the delivery. All the newborns, except one, were covered immediately after birth. Among 359 (99.7%) of the newborns wrapped, 93.1% were wrapped in clean cloth.

The cord was cut and clamped after two minutes of birth among 8 (2.2%) newborns. The cord was cut using a new shaving blade among 147 (40.8%) newborns followed by scissors 98 (27.2%). The most common substances applied on the cord was antibiotic powder in 141 (45.9%) followed by oil in 129 (42.0%) and haldi in 91 (29.6%) of newborns.

Among the study participants, 140 (38.9%) mothers initiated breastfeeding within one hour after the birth of the newborn. 65 (18.1%) of mothers discarded colostrum of which 50.8% of mothers considered that giving colostrum is unsafe to the baby. Majority of the mothers (81.9%) has given pre-lacteal feeding within the first three days after the birth. And the most common substances given as pre-lacteals were Janam Ghutti (60.9%), tea (9%) honey (10%), unboiled plain water (10.0%). Other substances are given as pre-lacteals included cow’s milk (13.5%) and powder milk (7.0%). Janam Ghutti is an herbal preparation that is given as a bowel cleaner and during bouts of abdominal colic. Only 52 (14.4%) of newborns were exclusively breastfed.

In table 1, Univariate analysis was applied on appropriate newborn care practices and antenatal and sociodemographic variables. There was a significant association between mother’s literacy, birth order, number of antenatal visits and place of delivery and newborn care practices.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Variables</th>
<th>Frequency (%)</th>
<th>P value</th>
<th>χ²</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>Applying Nothing on the cord (N=53)</td>
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<tr>
<td>a)</td>
<td>Birth order</td>
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<tr>
<td>&gt;=3</td>
<td></td>
<td>35 (20)</td>
<td>0.005</td>
<td>7.56</td>
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<tr>
<td>&lt;3</td>
<td></td>
<td>18 (9.7)</td>
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</tbody>
</table>
S.No. | Variables | Frequency (%) | P value | \( \chi^2 \)
--- | --- | --- | --- | ---
| b) | Mothers education | | | |
| | Middle school & above | 151(25.2) | | |
| | Primary school & Illiterate | 15(7.2) | 0.000 | 22.59 |
| c) | Place of Delivery | | | |
| | Institutional | 47(30.5) | 0.000 | 53.49 |
| | Home | 6(2.9) | | |
| 2) | Bathing The Baby After Three Days Of Birth(N=95) | | | |
| a) | Place of Delivery | | | |
| | Institutional | 81 (52.6) | 0.03 | 4.37 |
| | Home | 14 (6.8) | | |
| b) | ANC visits | | | |
| | >=3 | 85(29.5) | 0.03 | 4.37 |
| | <3 | 10(16.4) | | |
| 3) | Exclusive Breastfeeding During The Neonatal Period (N=52) | | | |
| a) | Birth Order | | | |
| | >=3 | 40(21.6) | 0.000 | 15.86 |
| | <3 | 12(6.9) | | |
| b) | Place of delivery | | | |
| | Institutional | 42(27.3) | 0.000 | 35.84 |
| | Home | 10(85) | | |
| 4) | Skilled birth attendant(N=154) | | | |
| a) | Mothers education | | | |
| | Middle and above | 130,(86.1) | 0.000 | 199.35 |
| | Primary and illiterate | 24,(11.5) | | |
| b) | ANC visits | | | |
| | >=3 | 140,(48.6) | 0.0002 | 13.44 |
| | <3 | 14,(22.9) | | |

Chi-square applied, p>0.05 is considered significant

**Discussion**

The present study was carried out with the objectives to determine the existing newborn care practices in a resettlement colony in East Delhi and to identify critical behaviors and barriers that influence the survival of newborns.

The study included 360 participants from resettlement colony among which 349(97%) had only one antenatal visit. This finding is consistent with Nimbalkar et al in which 94.4% of antenatal women had only one antenatal visits in the rural area and 79.9% in urban slums of Gujarat [14]. Among the study participants, 349(96.9%) women who utilized antenatal care on \( \geq 3 \) occasions, the abdominal examination was done only in 33.8% of participants and ultrasound examination in 27.8% which shows that antenatal care provided was not adequate. 197(56.4%) consumed Iron and folic acid tablets for \( \geq 100 \) days and 17(4.9%) women did not consume during their pregnancy. According to the National Family Health survey-4 (NFHS-4) 53.8% women in Delhi consumed iron and folic acid for 100 days which is consistent with the present study [15]. 206(57.2%) study participants preferred home delivery and 154(42.8%) institutional delivery, similar findings were reported by Rahi et al in an urban slum of Delhi (43.9%) and Meerut by Ahmad et al in urban slums of Mumbai(16.08%) [16,17].

In 73.6% of the deliveries clean instrument was used to cut the cord which is similar with findings of Baqui et al, where a clean instrument was used to cut the cord in 72.7% deliveries in rural areas of Lucknow [13]. In 115(31.9%) the cord was cut immediately after birth and
A clean material was used to tie the cord in 301(86.1%) of the deliveries which are higher than the findings of the study done in urban slums of Indore by Agarwal et al. Among the women who were delivered by unskilled birth attendants majority used unsterile material to tie the cord compared to those delivered by skilled personnel. This is consistent with the findings of the study by Rahi et al in urban slums of Delhi where the cord was tied using a clip in all institutional deliveries and sterile thread or a clip (available in delivery kits) was used only in 28.3% home deliveries.

307(85.3%) mothers applied something on the cord. This is similar to the findings of the study by Verma et al in districts of Uttar Pradesh where 83 percent of women reported applying something on the cord stump. 156(50.8%) of study participants used oil/ghee in the cord stump of the newborns. Iyengar et al reported a similar finding of use of ghee or powders and ointments on the cord in a slum and urban area of Chandigarh. Majority of study participants(30.5%)delivered by skilled attendant applied nothing on the cord stump as compared to those delivered by unskilled personnel (2.9%). This is consistent with the finding of the study by Rahi et al in urban slums of Delhi where nothing was applied to the cord in newborns born in the institution (86.1%) than those born at home (63%) . The study also showed that education of the mother and delivery by the skilled birth attendant was significantly associated with cord care practices. This finding was similar to that of the study by Baqui et al in rural Lucknow where clean cord care was associated with a maternal education level of secondary school or higher and skilled birth attendance.

In this study almost all the newborns were dried after birth to prevent hypothermia among which 112(31.1%) of them were dried immediately after birth and 190(52.8%) of them were dried after delivery of the placenta. Baqui et al reported that in rural Uttar Pradesh 34.8% of the newborns were dried immediately after birth and before the delivery of the placenta [13,23]48(13.3%) practiced skin to skin contact with the newborns. A study by Waiswa et al reported that only 2% of mothers practiced skin to skin contact in a rural area. Delaying bath helps in preventing hypothermia and infection. In this study 100(27.8%) of newborns was bathed immediately after birth which is lower compared to Rahi et al where 82.6% of newborns were bathed immediately after birth. In rural Uttar Pradesh, 26% of newborns were bathed immediately after birth and 56.8% within 6 hours of birth.

Initiation of breastfeeding within one hour of birth was reported by 140(38.9%) mothers and 270(75%) newborns were initiated on breastfeeding within 6 hours of birth. Similarly, early initiation of breastfeeding is reported in urban slums of Lucknow (36.6%), Unnao (5%) and Barabanki districts of Uttar Pradesh (19%). Baqui et al reported from rural areas of Unnao and Barabanki districts a high prevalence of pre-lacteal feeding (95.8%) which is similar to the current study(81.9%).

In this study, 18.1% of mothers avoided colostrum. The main reason for avoiding colostrum was that the mothers considered colostrum as stagnant breast milk which had accumulated during the entire period of gestation and so, according to them it could be harmful if given to the newborn. This is similar to the findings in the study by Kesterton et al in rural Karnataka, Gupta et al in urban slums of Lucknow and Mrisho et al in rural Tanzania. Colostrum avoidance is higher in those mothers delivered by unskilled personnel along with a high prevalence of giving top feed when compared with the delivery conducted by skilled attendants. Differences in colostrum feeding based on the place of delivery i.e. home vs. institution had been documented by Varma et al in Uttar Pradesh where a higher percentage (79%) of women who delivered in an institution fed colostrum as compared to those delivered at home (59%) and this difference was statistically significant (p< 0.01).

The prevalence of Exclusive breastfeeding was 14.4% subjects among the study participants which is lower than slums in Indore where Agarwal et al reported the prevalence of exclusive breastfeeding as 44.6%. Early initiation of breastfeeding was more in those newborns who were delivered by skilled personnel.
compared to those delivered by unskilled care providers. The differences reflect the gap in knowledge regarding correct newborn care provided by the skilled and unskilled personnel and it further stresses upon the need to involve unskilled care providers in the health system and educate them in context of essential newborn care practices.

**Recommendations:**

1. Increasing awareness and utilization of antenatal care to form an essential component in each pregnant mother and promote institutional deliveries or deliveries by skilled personnel.
2. Community mobilization and behavior change communications if amalgamated together might promote the adoption of evidence-based newborn care practices and increased uptake of neonatal services.

**Conclusion**

This study emphasizes the need for newborn care counseling of the mother during antenatal check-ups. Expanding skilled birth attendance can be viewed as an effective strategy to promote essential newborn care. Various behavioral change communication strategies through mass media and interpersonal education during antenatal visits could be studied for their effectiveness in changing critical behavior and barriers among the mothers and birth attendants. High-risk traditional newborn care practices need to be addressed by culturally acceptable community-based health programs to improve newborn care practices. The findings of our study underline the need for more targeted approaches to change newborn-care practices at home and community level.

**Source of Funding:** Nil

**Conflict of Interest:** Nil

**References**


