

Original research article

## A CROSS-SECTIONAL STUDY ASSESSING KNOWLEDGE AND PRACTICES OF POSTNATAL MOTHERS ON ESSENTIAL NEWBORN CARE

<sup>1</sup>Dr. Gokul Kumar K, <sup>2</sup>Dr. Ramkumar Boopathirajan

<sup>1</sup>Assistant Professor, Department of Community Medicine, St Peter's Medical College Hospital and Research Institute, Hosur, Tamil Nadu, India

<sup>2</sup>Professor, Department of Community Medicine, Ram Krishna Medical College Hospital and Research Centre, Bhopal, Madhya Pradesh, India

**Corresponding Author:**

Dr. Gokul Kumar K

**Abstract**

**Aim:** The aim of the present study was to assess knowledge and practices of postnatal mothers on essential newborn care.

**Methods:** A cross-sectional study was carried out within a community with 100 postnatal moms and their newborns. Approval was obtained from the institute's ethical committee. A birth registration at each sub-centre was consulted to compile a list of postnatal mothers who gave birth during the study period and registered using convenience sampling methods.

**Results:** Participants averaged 25.65 years old with a standard deviation of 3.87. Most postnatal mothers (95%) were Hindu, living in joint families (80%), and housewives (94%). Over 50% of the moms had at least a secondary level education, and most of them were from middle-class or higher socioeconomic origins according to the revised BG Prasad's scale-2019. Babies had an average birth weight of 2906±460.4 grams. The majority of the neonates were second-born (46%) with an average gestational age of 38.62±1.76 weeks. The study included nearly equal numbers of male and female neonates. The majority of newborns (74%), weighed 2500-3499 g. On average, newborns were 19.26±8.72 days old during their mothers' postnatal interviews. The average knowledge scores of postnatal moms on Essential Newborn Care (ENBC) were 24.46±6.74. About 50% of postnatal mothers were moderately knowledgeable. Postnatal mothers in Essential Newborn Care (ENBC) had an average practice score of 22.48±4.06. Over two-thirds of postnatal mothers practiced enough.

**Conclusion:** Most postpartum women were moderately informed and satisfied with Exclusive Nursing and Breastfeeding Counseling. There were safety issues in thermal control, nursing, cord care, and eye care, emphasizing the need for education and debunking myths.

**Keywords:** Essential newborn care, knowledge, postnatal mother, practices

**Introduction**

The World Health Organization (WHO) has developed a series of detailed recommendations known as essential newborn care to enhance the health of newborns by providing interventions shortly after birth and during the postnatal period <sup>[1]</sup>. Newborn care involves providing thermal care, ensuring a clean delivery, and properly managing the umbilical cord. Newborn care includes initiating nursing within the first hour of life, administering immunizations, providing eye care, identifying danger indicators, caring for preterm/low birth weight infants, and treating newborn diseases <sup>[2]</sup>. WHO identified various strategies that promote the health of neonates. The critical interventions highlighted for newborn care practices are clean cord care, thermal protection, early and exclusive nursing, delayed bathing, care for low-birth-weight newborns, and newborn management <sup>[3]</sup>. Cord care is a crucial aspect of infant care that is done either immediately after birth or after 1 to 3 minutes of delayed cord clamping. Early cord clamping is advised only in cases of neonatal hypoxia requiring emergency resuscitation. Delayed cord clamping is advised for all births when starting vital newborn care at the same time. Newborns delivered at home in high neonatal mortality settings (>30 per 1000) should have their umbilical cord stump treated with 4% chlorhexidine daily throughout the first week of life.

Newborns without difficulties should be placed in skin-to-skin contact with their mothers during the first hour after birth to minimize hypothermia and encourage early breastfeeding. Administer Vitamin K intramuscularly to the newborn as part of essential care after birth <sup>[4]</sup>. Proper care of a newborn is crucial for their survival, development, and overall health. The child's upbringing is significantly impacted by the mother's caregiving habits at home and the maternal and newborn care services provided at healthcare facilities <sup>[5]</sup>.

Internationally, the majority of newborn deaths can be prevented by implementing mother and child health programs that emphasize practices like as proper cord care to prevent sepsis, maintaining appropriate body temperature, and initiating breastfeeding early <sup>[6, 7]</sup>. Improving mothers' understanding of Essential Newborn Care (ENBC) is crucial for raising the quality of care, in addition to developing the skills of health workers. Knowledge gaps and enduring cultural values impact the survival of newborns when they are at home with their mothers. Enhancing mothers' knowledge and abilities in Essential Newborn Care (ENBC) is crucial for sustaining the life, growth, and development of newborns and lowering neonatal morbidity and mortality <sup>[8]</sup>. The current study aimed to evaluate the factors influencing the understanding and behaviors of postnatal moms about basic newborn care.

**Materials and Methods**

A cross-sectional study was carried out within a community with 100 postnatal moms and their newborns. Approval was obtained from the institute's ethical committee. A birth registration at each sub-centre was consulted to compile a list of postnatal mothers who gave birth during the study period. Postpartum women were approached through home visits and enrolled using convenience sampling technique.

Written informed consent was taken after explaining the purpose of the study from the participants. Postnatal mothers having stable single / twins / term / preterm / post term / low birth weight newborns, residing in the villages of selected PHC, willing to

participate in the study and able to understand Hindi or English were included. The postnatal mothers having critically ill newborns and hospitalized or not in a condition to provide information due to her own illness or hospitalization or mental illness were excluded.

The study tool included knowledge and practice questionnaires, as well as socio-demographic and clinical data sheets. The knowledge and practice questionnaires were a structured interview schedule developed after thorough literature evaluation. The study included information on various aspects such as age, religion, family type, education, and occupation of the postnatal mother and her husband, as well as the family's socio-economic status, place and mode of delivery, birth order, gestational age, newborn's sex, birth weight, and age at the time of the interview. The tools' reliability was confirmed using a test-retest procedure. The structured knowledge questionnaire consisted of 40 multiple choice questions (MCQs) and True and False items that addressed several aspects of Essential Newborn Care (ENBC) such as thermal care, breastfeeding, cord care, eye care, hand cleaning, and danger signs. The questionnaire contained 28 items designed to evaluate the practices of postnatal moms about Essential Newborn Care (ENBC). A score of '1' was awarded for a correct response and '0' for an incorrect response. The highest achievable knowledge score was 38, whereas the maximum practice score was 28. Knowledge and practice scores were classified as adequate if they were greater than 75%, moderate if they were between 51% and 75%, and deficient if they were 50% or below. The organized interview schedule underwent pre-testing and validation. The collected data were entered into the MS Excel 2013 spreadsheet, coded appropriately and analysed using statistical package SPSS 20. The level of significance was considered as p value <0.05.

## Results

**Table 1:** Socio-demographic characteristics of postnatal mothers

| Variables                  | Frequency (%) |
|----------------------------|---------------|
| Age (years)                | 25.65±3.87    |
| <b>Religion</b>            |               |
| Hindu                      | 95 (95)       |
| Muslim                     | 5 (5)         |
| <b>Type of family</b>      |               |
| Nuclear                    | 20 (20)       |
| Joint                      | 80 (80)       |
| <b>Educational status</b>  |               |
| Illiterate                 | 11 (11)       |
| Upper primary              | 23 (23)       |
| Secondary                  | 23 (23)       |
| Senior secondary           | 25 (25)       |
| Graduation & above         | 18 (18)       |
| <b>Occupational status</b> |               |
| Housewife                  | 94 (94)       |

|                              |         |
|------------------------------|---------|
| Working                      | 6 (6)   |
| <b>Socio-economic status</b> |         |
| Upper class                  | 21 (21) |
| Upper middle class           | 24 (24) |
| Middle class                 | 30 (30) |
| Lower middle class           | 21 (21) |
| Lower class                  | 4 (4)   |

The mean age (SD) of the participants was 25.65±3.87 years. Majority of postnatal mothers (95%) belonged to Hindu religion, had joint families (80%) and were housewives (94%). More than half of the mothers had secondary level or above educational status and majority of mothers belonged to middle class or above as per the modified BG Prasad's scale-2019.

**Table 2:** Birth profile of new-borns

| Variables                                    | Frequency (%) |
|----------------------------------------------|---------------|
| <b>Place of birth</b>                        |               |
| Institutional                                | 95 (95)       |
| Home                                         | 5 (5)         |
| <b>Mode of delivery</b>                      |               |
| Normal vaginal                               | 82 (82)       |
| Cesarean section/assisted                    | 18 (18)       |
| <b>Birth order</b>                           |               |
| First                                        | 34 (34)       |
| Second                                       | 46 (46)       |
| Third                                        | 15 (15)       |
| Fourth or more                               | 5 (5)         |
| Gestational age (week)                       | 38.62±1.76    |
| <b>Weight (in gm)</b>                        |               |
| <1999                                        | 3 (3)         |
| 2000-2499                                    | 11 (11)       |
| 2500-3499                                    | 74 (74)       |
| >3500                                        | 12 (12)       |
| <b>Age in days (on the day of interview)</b> |               |
| 0-7                                          | 11 (11)       |
| 8-14                                         | 21 (21)       |
| 15-21                                        | 23 (23)       |
| 22-28                                        | 45 (45)       |

The mean birth weight of newborns was 2906±460.4 gm. Most of the newborns were of second birth order (46%) with the mean gestational age (weeks) of 38.62±1.76. The study included female and male newborns in almost equal proportion. Most of the newborns 74 (74%) weighed between 2500-3499 g. The mean age of newborns on the

day of postnatal mothers' interview was  $19.26 \pm 8.72$  days.

**Table 3:** Overall knowledge scores of postnatal mothers on Essential newborn care (ENBC)

| Knowledge                  | Mean knowledge scores | Frequency (%) |
|----------------------------|-----------------------|---------------|
| Inadequate ( $\leq 50\%$ ) |                       | 26 (26)       |
| Moderate (51 - 75%)        | $24.46 \pm 6.74$      | 54 (54)       |
| Adequate ( $>75\%$ )       |                       | 20 (20)       |

The mean knowledge scores of postnatal mothers on Essential newborn care (ENBC) were  $24.46 \pm 6.74$ . About half of postnatal mothers had moderate knowledge.

**Table 4:** Overall practice scores of postnatal mothers on Essential newborn care (ENBC)

| Practices                  | Mean practice scores | Frequency (%) |
|----------------------------|----------------------|---------------|
| Inadequate ( $\leq 50\%$ ) |                      | 3 (3)         |
| Moderate (51-75%)          | $22.48 \pm 4.06$     | 20 (20)       |
| Adequate ( $>75\%$ )       |                      | 77 (77)       |

The mean practice scores of postnatal mothers on Essential newborn care (ENBC) were  $22.48 \pm 4.06$ . More than two-thirds of postnatal mothers had adequate practices.

## Discussion

Over the previous decade, India has showed great development in terms of decentralised health policy, decision making and cost-effective interventions in neonatal care. Efforts have been made to decrease maternal and child death rates, but the goal of achieving a two-thirds reduction in under-five mortality rate by 2015, as outlined in MDG 4, was not met<sup>[9]</sup>. The Sustainable Development Goals (SDGs) aim to decrease newborn mortality to less than 12 per 1,000 live births by 2030<sup>[10]</sup>. Though various efforts have been made by the government of India to prevent newborn mortality in India, it has continued to be huge public health problem. Essential newborn care (ENBC) is a comprehensive strategy aimed at enhancing the health of newborns from preconception to the postnatal period. ENBC practices, as advised by the World Health Organization (WHO), involve promptly drying and wrapping the newborn after birth, postponing bathing, starting early and exclusive breastfeeding, washing hands before providing clean and dry cord care, eye care, and recognizing danger signs<sup>[11]</sup>.

All moms should have the necessary information to properly protect their newborns from extreme cold in order to reduce the risks of severe illness and death caused by hypothermia. The current study found that postnatal mothers had a moderate lack of understanding regarding thermal care. The findings were consistent with Mohini *et al.*'s results, indicating that mothers had limited information. However, the study found that

there was a positive habit of delaying the newborn's first bath <sup>[12]</sup>. The mean age (SD) of the participants was 25.65±3.87 years. Most postnatal moms (95%) were Hindu, lived in mixed households (80%), and were housewives (94%). Over 50% of the moms had a secondary level education or more, and most of them were from the middle class or above according to the revised BG. Prasad's Scale 2019. The mean birth weight of neonates was 2906±460.4 gm. The majority of the neonates were second-born (46%) with an average gestational age of 38.62±1.76 weeks. The study involved an approximately equal distribution of female and male births. Approximately 74% of the babies weighed between 2500-3499 g. The average age of neonates at the time of postnatal moms' interview was 19.26±8.72 days. The average knowledge scores of postnatal moms on Essential Newborn Care (ENBC) were 24.46±6.74. In this study, fewer than 50% of postnatal mothers-initiated nursing within 1 hour of birth. Additionally, they provided prelacteal meals such water, ghutti, honey, and tea before breastfeeding. This discovery aligns with numerous studies conducted in India and other South Asian nations, which suggest that postnatal moms introduce supplementary foods or liquids before initiating nursing <sup>[13-16]</sup>. Neonatal sepsis ranks as the third leading cause of neonatal mortality within the first month of life. The freshly severed umbilical cord can serve as a route for bacterial infection leading to newborn sepsis and mortality. Traditional cord care procedures that are harmful are prevalent in low- and middle-income countries <sup>[17]</sup>.

Approximately 50% of postnatal mothers have a moderate level of expertise. The average practice scores of postnatal moms in Essential Newborn Care (ENBC) were 22.48±4.06. Over two-thirds of postnatal mothers demonstrated sufficient habits. The study found that the religion and educational background of postnatal moms had a substantial impact on their practices related to Exclusive Newborn Care (ENBC). Hence, it is necessary to eliminate the deeply ingrained cultural assumptions of postnatal mothers by education and reinforcement. The researcher directly saw most of the ENBC activities in the study and provided appropriate advice to postnatal moms and caregivers during home visits.

### **Conclusion**

The majority of postnatal mothers exhibited modest awareness and satisfactory practices for Exclusive Nursing and Breastfeeding Counseling (ENBC). There were identified deficiencies in implementing safe procedures related to thermal control, breastfeeding, cord care, and eye care, highlighting the importance of education, reinforcing, and addressing cultural views.

### **References**

1. Neonatal mortality: situation trends. World Health Organization; c2013.
2. Informed Decisions for Actions in Maternal Newborn Health. Community-based newborn care.
3. WHO recommendations on home-based records for maternal, newborn and child health. Geneva: World Health Organization; c2018.
4. World Health Organization (WHO). Newborn health guideline. 2<sup>nd</sup> ed. Geneva: WHO; c2017 May. p. 9-11.
5. Shahjahan M, Ahmed MR, Rahman MM, Afroz A. Factors affecting newborn care

- practices in Bangladesh. *Paediatr Perinat Epidemiol.* 2012 Jan;26(1):13-18.
6. World Health Organization Health WHOR Health WHODoR. *Pregnancy, Childbirth, Postpartum, and Newborn Care: A Guide for Essential Practice.* Geneva: World Health Organization; c2003.
  7. Saaka M, Ali F, Vuu F. Prevalence and determinants of essential newborn care practices in the Lawra District of Ghana. *BMC Pediatr.* 2018 May 24;18(1):173.
  8. Negussie BB, Hailu FB, Megenta AD. Knowledge and practice of essential newborn care and associated factors among nurses and midwives working at health centers in Jimma Zone, Ethiopia, 2016. *J Nurs Care.* 2018 Jan;7(446):2167-2168.
  9. Liu L, Chu Y, Oza S, Hogan D, Perin J, Bassani DG, *et al.* National, regional, and state-level all-cause and cause-specific under-5 mortality in India in 2000-15: A systematic analysis with implications for the Sustainable Development Goals. *Lancet Glob Health.* 2019;7(6):e721-734.
  10. Kumar S, Kumar N, Vivekadhish S. Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs): Addressing Unfinished Agenda and Strengthening Sustainable Development and Partnership. *Indian J Community Med.* 2016;41(1):1-4.
  11. World Health Organization, Department of Maternal N Child and Adolescent Health. *WHO recommendations on postnatal care of the mother and newborn;* c2013.
  12. Mohini H, Shetty S. A study to assess the knowledge of mothers on home based neonatal care at selected area of rural Bangalore. *International J Community Medicine and Public Health.* 2017;4(5):1695-1700.
  13. Sharma H, Goel AD, Gosain M, Amarchand R, Kapoor SK, Kumar A, *et al.* Community healthcare professional visits are important determinants of knowledge and practices regarding newborn care among mothers. *Journal of Natural Science, Biol Medic.* 2018;9(2):159.
  14. Osrin D, Tumbahangphe KM, Shrestha D, Mesko N, Shrestha BP, Manandhar MK, *et al.* Cross sectional, community-based study of care of newborn infants in Nepal. *BMJ.* 2002;325(7372):1063.
  15. Fikree FF, Ali TS, Durocher JM, Rahbar MH. Newborn care practices in low socioeconomic settlements of Karachi, Pakistan. *Soc Sci Med.* 2005;60(5):911-921.
  16. Holman DJ, Grimes MA. Colostrum feeding behaviour and initiation of breast-feeding in rural Bangladesh. *J Biosoc. Sci.* 2001;33(1):139-54.
  17. Coffey PS, Brown SC. Umbilical cord-care practices in low and middle-income countries: A systematic review. *BMC Pregnancy Childbirth.* 2017;17(1):68.
  - 18.