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**TITLE: EXPLORING NEWBORN CARE PRACTICES AT FACILITY
AND HOME IN URBAN DHAKA, BANGLADESH**

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A thesis submitted to the BRAC James P Grant School of Public Health in partial fulfilment
of the requirements for the degree of Master of Public Health

BRAC James P Grant School of Public Health
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Declaration

I, [Azima Khatun], hereby declare that this thesis entitled "Exploring newborn care practices from facility to home in urban Dhaka, Bangladesh," is an original work submitted in partial fulfilment of the requirements for the degree of Master of Public Health (MPH) at the James P. Grant School of Public Health (JPGSPH), BRAC University, Dhaka, Bangladesh.

I further declare that this work has not been submitted previously, in whole or in part, for any other degree or examination at this or any other university or institution.

All sources used in this thesis have been duly acknowledged and cited. Any assistance received has been mentioned in the acknowledgements section.

I have also added a separate declaration on GenAI use at the end of this work.

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Approval

The thesis titled “Exploring newborn care practices from facility to home in urban Dhaka, Bangladesh”, submitted by Azima Khatun (ID:192081)

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Ethics Statement

Ethical approval for this study was obtained from the Institutional Review Board of BRAC James P Grant School of Public Health, BRAC University. Written administrative approval was also taken from the director of the Maternal and Child Health Training Institute (MCHTI), Azimpur, before the data collection. Informed written consent was taken from all participants for audio recording and for photography.

Abstract

Background: Neonatal mortality remains a major global public health concern, with approximately 2.3 million newborn deaths occurring during the first month of life in 2024, many of which were preventable through timely and appropriate Essential Newborn Care (ENC). Recommended ENC practices, including thermal care, early initiation of breastfeeding, hygienic cord care, skin-to-skin contact, and early recognition of danger signs, are crucial for reducing neonatal morbidity and mortality.

Despite progress in maternal and child health in Bangladesh, neonatal morbidity and mortality remain high, particularly in urban areas where rapid urbanization, overcrowding, socio-economic disparities, and gaps in newborn care practices continue to affect newborn survival. Limited qualitative evidence exists on caregivers' knowledge, perceptions, practices, and health system factors influencing newborn care in urban settings, highlighting the need for context-specific research to improve newborn health outcomes.

Objectives: The study aimed to explore comprehensive newborn care practices from health facilities to the community level in urban Dhaka by examining community and health system factors influencing newborn care. Specifically, the study explored mothers' knowledge, perceptions, and practices regarding essential newborn care and identified and explained the factors influencing newborn care practices in both health facility and home settings.

Methods: A qualitative study using a focused ethnography design was conducted from January to April 2026 in the Maternal and Child Health Training Institute (MCHTI), Azimpur, and the Kamrangirchar urban slum area in Dhaka, Bangladesh. The study population included hospital-delivered mothers, community women, family caregivers, healthcare providers, and health managers involved in newborn care. Purposive sampling was used to recruit participants who could provide in-depth information on newborn care practices and experiences. A total of 66 participants and observations were included, comprising 20 in-depth interviews (IDIs), 2 focus group discussions (FGDs), 6 key informant interviews (KIIs), and 20 non-participant observations. Data were collected using semi-structured interview guides and observation checklists. All interviews and discussions were audio-recorded, transcribed, and translated into English, and observation notes were elaborated on the same day and finally analyzed manually using thematic

analysis. Both deductive and inductive coding approaches were applied to identify key themes and patterns. Data triangulation across IDIs, FGDs, KIIs, and observations enhanced the credibility and validity of the findings.

Results: Findings showed that mothers had fragmented and limited knowledge regarding cord care, thermal care, breastfeeding, immunization, and newborn danger signs, with many depending on healthcare providers and family members for guidance. Early breastfeeding, skin-to-skin contact, and recommended cord care practices were inconsistently practiced, while traditional beliefs and socio-cultural influences continued to shape newborn care behaviours, particularly in home settings. Observational findings also revealed gaps between reported guideline-based care and actual practices in health facilities, where informal staff often managed immediate newborn care. Health system barriers, including shortages of trained staff, medicines, equipment, and inadequate infrastructure, further affected the quality of newborn care services. Despite these challenges, mothers expressed positive attitudes toward facility delivery and a strong interest in receiving more counselling and guidance on newborn care. Healthcare providers also emphasised the need for improved training, adequate staffing, better logistics, and strengthened neonatal care services, including NICU support.

Conclusions: Mothers valued newborn care but had limited knowledge of essential newborn care practices. Socio-cultural beliefs and health system barriers, including shortages of trained staff and resources, affected proper newborn care. Improving and strengthening neonatal healthcare services reinforced by quality and community-based care are essential to achieving better newborn health outcomes.

Keywords: Essential Newborn Care, Antenatal Care, Cord Care, Skin-to-Skin Contact, Colostrum, Newborn Health Outcomes, Bangladesh.

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List of Acronyms

Acronyms	Full Form
ENC	Essential Newborn Care
NVD	Normal Vaginal Delivery
WHO	World Health Organisation
ANC	Antenatal Care
PNC	Postnatal Care
DGFP	Directorate General of Family Planning
MoHFW	Ministry of Health and Family Welfare
IDI	In-Depth Interview
KII	Key Informants Interview
FGD	Focus Group Discussion
SDG	Sustainable Development Goal
TTBA	Trained Traditional Birth Attendance
DCC	Delayed Cord Care
MCHTI	Maternal and Child Health Training Institute

Chapter 1: Introduction

Background and Rationale

The care given to newborns right after birth has a significant impact on their morbidity and death. In 2024, 2.3 million children perished in their first month of life, and approximately 6,200 neonatal fatalities occurred every day, according to UNICEF (UNICEF, 2026). Even though newborn mortality has significantly decreased during the past decade, data also indicate that children still have the highest risk of dying worldwide, around 17.2 per 1000 live births in their first month in 2024. (UNICEF, 2026). However, many of these deaths were preventable if timely and appropriate newborn care had been taken. Essential newborn care (ENC), as stated by the World Health Organization (WHO), involves immediate care at the time of birth and essential care during the entire newborn period, both in the health facility and at home (WHO, 2026).

Despite the decline in under-5 mortality in Bangladesh from 94 to 31 per 1000 live births over two decades, neonatal mortality remains high, accounting for 20 deaths per 1000 live births (NIPORT et al 2001; NIPORT et al 2024). This report also highlighted an alarming scenario, showing that only 1% of newborns receive all ENC, although 56% get a postnatal check within the 2 days after birth. Several studies have shown that proper implementation of ENC practice can improve newborn health (Moutwakil et al., 2026). Recognizing the importance of ENC practices for improved newborn health in Bangladesh, this focused ethnography study was conducted to understand ENC from facilities to home, specifically in urban Dhaka.

Problem Statement

Despite improvements in neonatal and maternal health care in Bangladesh, neonatal morbidity and mortality remain substantially high, particularly in urban areas where rapid urbanization, overcrowding, and socio-economic disparities influence newborn care practices (Razzaque et al., 2024). Though facilities are available in urban Dhaka, many newborns are still facing preventable diseases due to inappropriate essential care. However, existing literature primarily focuses on rural community contexts or on quantifying practices without adequately explaining why unhealthy or

delayed newborn care behaviours and practices persist, or how these practices are being shaped in the community.

There is limited qualitative evidence regarding caregivers' understanding, perceptions, and lived experiences related to newborn care and the handling of neonatal issues in both community and hospital environments in urban areas. Therefore, understanding social determinants, family culture, and health system factors influencing newborn care and achieving neonatal health outcomes is crucial. This focused ethnographic study on ENC in urban areas would help address the existing evidence gaps by generating an in-depth understanding of facilitators and barriers influencing newborn care practices in urban areas, especially in Dhaka. This may help develop culturally appropriate evidence and interventions for both community and health facilities to improve ENC practices, thereby contributing to reducing preventable neonatal mortality and morbidity.

1.3 Research Questions

1. What is mothers' knowledge, perceptions, and practices regarding essential newborn care in urban Dhaka?
2. How do health system and community factors shape newborn care practices at a health facility and at home?

1.4 Study Objectives

1.4.1 General Objective

The study aims to explore newborn care practices from the facility to the community in urban Dhaka by examining community and health system factors.

1.4.2 Specific Objectives

The specific objectives of this study are:

1. To explore mothers' knowledge, perceptions, and practices of newborn care.
2. To identify and explain the factors influencing newborn care practices at health facilities and at home

Chapter 2: Literature Review

2.1 Global Evidence

When a baby is born, they undergo many physical and psychological changes to adapt to the external environment outside the mother's womb. Still, if this adaptation process is not done carefully, then the baby may become severely affected or even die (Alemayehu et al., 2022). ENC in combating newborn illness and mortality in low and low-middle-income countries, and Bangladesh is no exception to this situation.

Despite newborn morbidity and mortality being mostly preventable, they are still high in developing countries, remaining an important public health concern (WHO, 2024). According to a WHO report, around 47% of all deaths occur among under-5 children during their neonatal period, with three-quarters of neonatal deaths occurring within the 1st week after birth due to proper treatment and inadequate skilled care immediately after birth (WHO, 2024). Another report from UN IGME 2024 showed that approximately 4.8 million neonates died before they reached their age in 5, and in 2023, around 2.3 million newborns died globally (UNICEF, 2024). The report also showed that in developing countries, neonatal mortality is ten times higher than in developed countries. Also, the WHO report states that in sub-Saharan Africa, babies are 14 times more likely to die in the neonatal period than in Australia and New Zealand (WHO, n.d). Moreover, Sub-Saharan Africa has the highest neonatal mortality rate at 28/1000 live births, with 1.2 million deaths occurring every year (Nampijja et al., 2024). In Ethiopia, every year, almost 120,000 babies pass away in their first week of life, which alone is responsible for 42% of all under-5 mortality deaths. This is because many mothers lack basic newborn care knowledge and practices (Berhan & Gulema, 2018). Several studies have shown that proper implementation of ENC practice can improve newborn health. If children who started beyond the first hour could start within this time, one-sixth of the reported danger indications in the early neonatal period might be decreased (Raihana et al., 2019). Another study also showed that delayed cord clamping (DCC) helps prevent iron deficiency anaemia, improves haemoglobin levels and oxygen circulation, strengthens immunity through the transfer of maternal nutrients and antibodies, and may reduce the need for neonatal blood transfusions (Jabeen et al., 2024).

However, across South Asia, studies found that newborn care practices are strongly influenced by socio-cultural norms and traditional beliefs, and many studies assessed mothers' level of knowledge and associated factors of newborn care practices. Across South Asia, umbilical cord practices and delayed thermal care contribute to persisting neonatal mortality (Mallick et al., 2019). In India, there remains a knowledge gap among formal and informal health care providers (Mungai et al., 2020); traditional newborn care practices, such as early bathing, oil instillation, and reliance on traditional healers, are still more common in rural and tribal communities in South India (Arumugam et al., 2023). In low and low-middle-income countries, newborn care practices are associated with socio-cultural norms, gender norms, and household decision-making. A study in Nepal showed that adequate newborn care knowledge among mothers was significantly linked with maternal education, occupation, antenatal and postnatal care visits, household income, age at first pregnancy, and proximity to health facilities (Singh et al., 2019). Socioeconomic status, cultural beliefs, and religion strongly shape newborn care practices. Many community members in rural Bangladesh have limited knowledge of essential newborn care, including appropriate feeding practices, safe umbilical cord care, and timely care-seeking for neonatal health problems (Begum et al., 2021). This study also emphasises the influential role of family members, such as the mother-in-law, in shaping newborn care practices at home.

However, evidence from Bangladesh also highlights the gaps in essential ENC practice, particularly among rural and underprivileged people. A study has shown that rural people still have misconceptions and harmful traditional practices, including incorporating unhygienic cord care, early bathing, and delayed care seeking for newborn illnesses, which can significantly contribute to neonatal mortality and morbidity (Abdullah et al., 2021). Socioeconomic status, cultural beliefs, and religion strongly shape newborn care practices.

Health system barriers exist in the effective implementation of essential newborn care provision, both at the facility and community levels. A study in Ethiopia showed that some barriers in health facilities, such as resource constraints, inadequate counselling, limited postnatal follow-up, and weak referral systems, hinder the implementation of ENC in both facility and community levels (Alemayehu et al., 2022). The study also found that a lack of standardized protocols and guidelines

can lead to inconsistencies in care practices, making it difficult to provide proper care (Addy et al., 2023).

Although the health facility has tried to give support regarding newborn care, the study also found that in Ghana, caregivers mainly relied on home-based or traditional herbal remedies for neonatal care. Factors such as limited experience in caring for newborns, perceived severity of illness, and financial constraints significantly influenced caregivers' treatment-seeking decisions for neonatal illnesses (Kanton et al., 2023). Moreover, the study also found that in Bangladesh, mothers who gave birth in health facilities, especially through c-section, were more likely to start feeding within an hour after the delivery to those who had a normal delivery (Kundu et al., 2022).

Overall, newborn care practice evidence from national, regional, and global levels has shown that ENC is shaped by different factors such as maternal knowledge, cultural norms, and family influence, as well as health system factors. While many studies in Bangladesh have shown the availability of newborn care and knowledge and practice ENC, but there is limited evidence in Dhaka that explores the newborn care situation and how socio-cultural factors and health system factors collectively influence both within health care facilities and at home regarding newborn care practices. Therefore, understanding the interconnected factors is essential for newborn care practices for designing culturally responsive and effective interventions to improve newborn survival in Bangladesh.

2.2. WHO Recommended Essential Newborn Care

The World Health Organization has recommended basic preventive newborn care practices, such as immediate newborn care, and this includes cord clamping, newborn should give mother's skin to skin contact as soon as possible and newborn should drying immediately and provide thermal care, assessment of breathing, early initiation of breastfeeding, including colostrum and exclusive breastfeeding, and also support for breast milk feeding, thermal care, immunization and early detection of danger signs and timely and safe referral (WHO, 2017). Cord care, a vital aspect of newborn care, should be conducted either immediately after birth (within 1 minute) or through late cord clamping (which is done 1 to 3 minutes after birth). Early cord clamping is discouraged unless the newborn is asphyxiated and urgently needs to be taken for resuscitation. Delayed cord clamping is advised for all deliveries while also initiating concurrent ENC. For newborns delivered

at home in areas with high neonatal mortality rates (greater than 30 per 1000), applying chlorhexidine (4%) to the umbilical cord stump daily during the first week of life is recommended. To avoid hypothermia and encourage breastfeeding, newborns without complications should be kept in skin-to-skin contact with their mothers for the first hour following birth. (Leta, 2022). Those cares are most effective for a baby right after birth, as they can help to prevent newborn mortality and morbidity.

2.3 Conceptual/Theoretical Framework

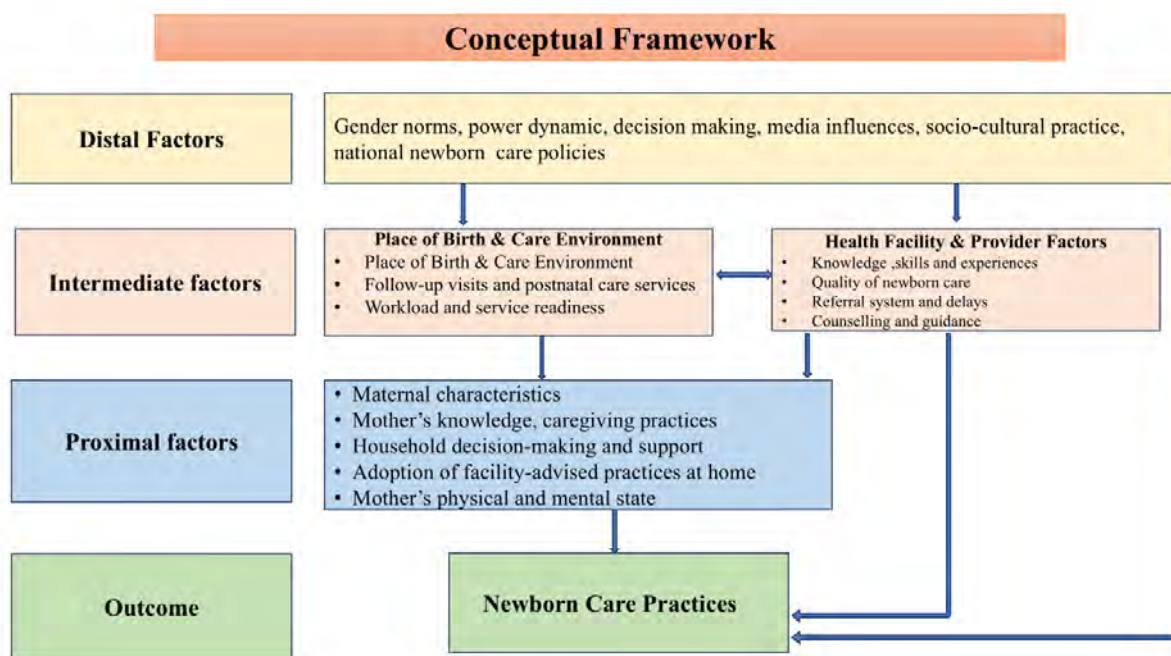


Figure 1: Conceptual Framework

This study's conceptual framework was adopted from (Izulla et al., 2023; Conway et al., 2020). The framework explains how different factors influence newborn care practice. This framework has three different levels, which are proximal, intermediate, and distal factors that shape the outcome of newborn care practices. This framework can provide a broader understanding of newborn care at home and in the facility.

At the distal level, broader socio-cultural factors such as family power dynamics, gender norms, sociocultural practices, media influence, and decision-making impact newborn care practices.

These factors may indirectly affect mothers' knowledge, perceptions, and care-seeking behaviours, which ultimately affect newborn care.

Additionally, at the intermediate level, the health facilities' environment and patients' care-seeking behaviours or their services could influence the neonatal care practice. This level included the place of birth and care environment, workload and service readiness, postnatal care, and follow-up services. Moreover, there are also other factors like health facility and provider factors that are also included in skills, quality of care, referral systems, and counselling practices that also influencing the quality of ENC practices.

The third factor, which is at the proximal level, in this case, individual and household factors, is directly linked with newborn care practices in both at-home and facilities. Basically, these factors are included in maternal characteristics, knowledge, perception, newborn care practices, household care support, and care practices at home, which are recommended by the facility and also the mother's physical and mental condition. Those factors really impact newborn care practices as they are directly linked to the care practices.

Overall, this conceptual framework showed that actual newborn care practices are not only shaped by specific factors but also show multiple interactions between individuals' behaviour and facility services, as well as socio-cultural factors, that have an impact on the quality of care.

Chapter 3: Methods

3.1 Study Design

This study used an aimed qualitative research approaches using a focused ethnographic approach to explore newborn care practices, experiences, and social interactions within a defined population and contextual setting. Focused ethnography is a problem-oriented and context-specific qualitative methodology that facilitates an in-depth understanding of health-related behaviours and practices through intensive data collection over a relatively short period of field engagement (Knoblauch, 2005; Cruz & Higginbottom, 2013). In this context, the focused ethnographic design was appropriate for this study as it enabled an in-depth exploration of newborn care practices among mothers in urban Dhaka, Bangladesh. The approach facilitated the examination of mothers' and caregivers' knowledge, perceptions, and caregiving practices, as well as the influence of family dynamics and health system factors on newborn care.

3.2 Study Area and Setting

The study was conducted at the Maternal and Child Health Training Institute (MCHTI), Azimpur, under the Directorate General of Family Planning (DGFP), Ministry of Health and Family Welfare (MoHFW), and in Kamrangirchar, an urban informal settlement in Dhaka, Bangladesh. The study sites were selected in consultation with the DGFP and were purposively chosen because they serve a large and socioeconomically diverse urban population and provide an opportunity to examine newborn care practices in both health facility and household settings. MCHTI is a major provider of maternal and newborn health services, offering access to mothers immediately following childbirth, while Kamrangirchar represents a densely populated urban community where newborn care practices are shaped by household, social, and environmental factors. The close geographic and service linkage between MCHTI and Kamrangirchar facilitated the triangulation of facility- and community-level perspectives on newborn care. In addition, the longstanding collaboration and strong institutional rapport between the BRAC James P Grant School of Public Health and the study sites facilitated administrative approval, stakeholder engagement, and efficient implementation of field activities.

3.3 Operational Definitions

Essential Newborn Care (ENC): ENC refers to immediate care at the time of birth and essential care during the entire newborn period, both in the health facility and at home, to promote newborn survival and well-being. Key components include clean cord care, thermal protection through immediate drying, skin-to-skin contact and delayed bathing, and early initiation of breastfeeding (WHO, 2026; Begum et al., 2022).

3.3 Study Period

The study commenced in January 2026. Data were collected from March to April 2026 through facility-based and community-level interviews. Following data collection, all interviews were transcribed to ensure the accuracy and completeness of the data. The transcribed data were then analysed.

3.4 Study Population

The study population included mothers who had delivered in MCHTI through either NVD or C-section, and women living in Kamrangirchar who had experienced at least one live birth. The study also included family members involved in newborn care and decision-making, such as husbands, mothers, and mothers-in-law. In addition, healthcare providers involved in newborn care services, including paediatricians, nurses, midwives, and trained traditional birth attendants (TTBAs), as well as hospital managers responsible for newborn care services and management, were included. Details of the study participants and their eligibility criteria are presented in Table 1.

3.4.1 Inclusion and Exclusion Criteria

Eligibility criteria were developed for each participant group to ensure that participants had relevant knowledge and experience related to newborn care practices and service provision. The inclusion and exclusion criteria for all study participants are presented in Table 1.

Table 1: Inclusion and exclusion criteria of study participants

Participants	Inclusion Criteria	Exclusion Criteria
Hospital-delivered Mothers	• Aged 18 years or older • Had a live birth through NVD or C-section at MCHTI • Within 7 days postpartum • Able and willing to provide written informed consent • Willing to participate in audio-recorded interviews	• Below 18 years of age • Severe postpartum complications or other serious physical illnesses • Experienced a stillbirth • Unwilling to provide informed consent or participate in audio recording
Community Women	• Aged 18 years or older • Residing in Kamrangirchar, Dhaka • Had at least one live birth • Able and willing to provide written informed consent • Willing to participate in audio-recorded interviews	• Below 18 years of age • Not residing in Kamrangirchar, Dhaka • Women with no history of live birth • Unable or unwilling to provide informed consent • Unwilling to participate in an audio-recorded interview
Family Members (Husband, Mother, Mother-in-law, or Other Female Family Member)	• Aged 18 years or older • Actively involved in newborn care or health-seeking decisions • Present with the mother during the postnatal period at home and/or hospital • Able and willing to provide written informed consent • Willing to participate in audio-recorded interviews	• Below 18 years of age • Not involved in newborn care or decision-making • Unwilling to provide informed consent or participate in audio recording
Doctors	• Currently working in paediatric or neonatal services at MCHTI • Directly involved in newborn care or management of neonatal	• Not directly involved in newborn or neonatal care • Less than one year of work experience in the current setting

	• complications • At least one year of work experience in the current setting • Able and willing to provide written informed consent • Willing to participate in audio-recorded interviews	• Unwilling to provide informed consent or participate in an audio-recorded interview
Nurses/Midwives/Hospital Birth Attendants (<i>Khalas</i>)	• Currently providing maternal or newborn care services • Directly involved in labour, delivery, postnatal, or neonatal care • At least six months of work experience in the current setting • Able and willing to provide written informed consent • Willing to participate in audio-recorded interviews	• Not involved in maternal or newborn care services • Less than six months of work experience in the current setting • On leave, training, or rotation during the data collection period • Unwilling to provide informed consent or participate in an audio-recorded interview
Hospital Director	• Serving in a managerial role at MCHTI • Willing to provide written informed consent	• Unwilling to provide informed consent or participate in an interview

3.5 Sampling Technique and Sample Size

A total of 66 participants were included in this qualitative study through IDIs, FGDs, KIIs, and non-participatory observations. An overview of participant categories and sample sizes is presented in Table 2.

Twenty IDIs were conducted among hospital-delivered mothers and their family members. The FGD participants included 16 mothers who had delivered within the previous 7 days (8 via c-section, 8 via NVD and 4 family members, such as mothers, mothers-in-law, husbands, or other close relatives directly involved in newborn care decisions and practices at home or in the hospital.

Two FGDs were conducted with community women residing in Kamrangirchar for at least six months who had delivered at least one live baby either at home or in a health facility. Each FGD consisted of 8 participants, resulting in a total of 16 participants.

Six KIIs were conducted with individuals involved in newborn care services and programme implementation. These included two paediatricians, one operating theatre (OT) nurse, one midwife, one trained or traditional birth attendant (TTBA), and one hospital director who provided managerial and system-level perspectives on newborn care services.

Additionally, 20 non-participatory observations were conducted in hospital settings to contextualize newborn care practices and provider-client interactions. Observations included newborn care of 10 c-section deliveries and 10 NVDs, focusing on ENC practices, provider-patient interactions, and facility readiness.

Purposive sampling was used across all participant categories to ensure the inclusion of individuals with direct experience and relevant knowledge of ENC practices. The diversity of participants enabled the exploration of multiple perspectives and facilitated a comprehensive understanding of newborn care from health facilities to households in an urban setting. Data collection continued until sufficient depth and thematic saturation were achieved across participant groups

Table 2: Overview of participant types and sample sizes

Qualitative Data Collection Method	Category	Number of Participants	Total
In-depth Interviews (IDIs)	Hospital-delivered mothers with C-section	8	20
	Hospital-delivered mothers with NVD	8	
	Family members	4	
Focus Group Discussions (FGDs)	Community women	7-8 participants per group	16
Key Informant Interviews (KIIs)	Paediatricians	2	6
	Operating theatre (OT) nurse	1	
	Midwife	1	
	Trained or traditional birth attendant (TTBA)	1	
	Hospital director	1	

Non-participatory Observations of Newborn care	C-section deliveries	10	20
	NVDs	10	

3.6 Participants selection

The study adopted purposive sampling to recruit participants most likely to provide in-depth, contextually relevant information on newborn care practices. Participants were selected with clearly defined inclusion and exclusion criteria shown in Table 1. Eligible hospital-delivered mothers were identified through hospital delivery registries, which facilitated systematic access to women who had institutional childbirth. And for FGDs, community women were identified with the assistance of BRAC health workers using established community registry lists, ensuring inclusion of mothers who delivered at both health facilities or at home. Family members of the mother who act as caregivers from each category were purposively selected.

Service providers, including paediatricians, nurses (OT), midwives, and hospital birth attendants (trained or untrained traditional birth attendants known as *Khalas* in a hospital setting), were purposely selected based on their involvement in newborn care, and they were present on that roster duty. In addition, implementers, such as a hospital director or senior administrator, were included to gather some information on policy implementation, facility management, resource allocation, and system-level factors influencing newborn care services. Participants for observation were selected purposively from mothers delivering in the chosen hospital during the study period. Both C-section and NVD mothers were included to explore the variations in immediate and ENC practices between the two delivery modes. Observations were conducted in a selected hospital to record the newborn care practices in real settings and service provider-patient interactions. Basically, this observation will focus on both C-section and NVDs to explore the differences in immediate and ENC practices in these two different modes of delivery within working hours.

3.7 Tools Development

Based on existing relevant literature review data collections tools were developed, national policy documents, and the study's research objectives. The development process was further informed by participant selection criteria and consultations with program implementers to ensure contextual relevance and comprehensiveness. Semi-structured guidelines for IDIs, FGDs, and KIIs were developed to explore participants knowledge, perceptions, experiences, and practices related to newborn care in both hospital and urban community settings.

In addition, structured observation checklists were developed through a review of existing literature and national newborn care guidelines and were subsequently refined through consultation with implementers to ensure alignment with national priorities for ENC. The observation tools focused on documenting immediate and essential newborn care practices, provider–patient interactions, and facility readiness for newborn care service delivery.

The data collection tools were initially developed in Bangla by the researcher and were subsequently translated into English using Google Gemini (<https://gemini.google.com>). The translated versions were manually reviewed and cross-checked against the original Bangla instruments by the researcher to ensure conceptual equivalence, accuracy, and consistency across languages.

3.7.1 Pretesting

The data collection tools were pre-tested among five mothers who had recently delivered and lived in the Sattola slum area near BRAC JPGSPH. The pre-test was conducted to assess the clarity, cultural appropriateness, and sequencing of the interview questions, as well as the feasibility of the data collection process. Based on the pre-test findings, several questions were revised because participants found some of the wording difficult to understand and required additional explanations. The sequence of questions was also modified to improve the logical flow of the interviews. Minor revisions included simplifying the language, replacing technical terms with locally understood words, and rephrasing questions to make them easier for participants to understand and respond to.

3.7.2 Data Collection

Data collection was conducted between March 1 to April 15, 2026. Sixteen IDIs were conducted with hospital-delivered mothers, while four IDIs were conducted with their family members. Six KIIs were conducted with healthcare providers and hospital administrators at MCHTI, Azimpur. After obtaining written informed consent, interviews were conducted in private and convenient locations within the hospital using semi-structured interview guides and lasted approximately 30–50 minutes. All interviews were audio-recorded with participants' consent, and field notes were taken to document contextual information and non-verbal observations.

In addition, non-participatory observations were conducted throughout the data collection period using a structured observation checklist. A total of 20 deliveries (10 C-section and 10 NVD) were observed to document immediate and essential newborn care practices, provider–patient interactions, and facility readiness. Detailed field notes were maintained during each observation.

In addition, two FGDs were conducted in Kamrangirchar with community women who had at least one child. After obtaining written informed consent, each discussion was facilitated by the researcher, with support from a note-taker. The note-taker documented key discussion points, non-verbal interactions, and contextual observations. All discussions were audio-recorded, and refreshments were provided to participants in appreciation of their time and participation.

Additionally, with participants' consent, follow-up home visits were conducted with three previously interviewed mothers to explore newborn care practices within the household setting. Using the contact and demographic information collected during the initial interviews, the researcher visited participants' homes. During these visits, additional interviews with audio recordings and observational field notes were collected to enrich and validate the study findings.

All audio recordings were transcribed verbatim, and field notes were expanded into detailed records to support data analysis and ensure data quality.

3.8 Data Management and Quality Assurance

All qualitative data were managed systematically to ensure accuracy, consistency, and confidentiality. To ensure data quality, field notes were taken during interviews, FGDs, and observations were expanded into detailed notes immediately after each session. These notes were integrated with the interview transcripts to capture non-verbal cues, contextual information, and researchers' reflections that supported data interpretation. Audio-recorded interviews and FGDs were transcribed verbatim after data collection, preferably on the same day. Transcripts were reviewed repeatedly to ensure familiarity with the data. A coding framework was subsequently developed based on both predefined themes derived from the study objectives and inductively emerging themes identified during transcriptions review. To maintain confidentiality, all audio recordings, transcripts and documents were kept in a secure, password-protected Google Drive, which was logged into the university-authorized Gmail. And all participants identification was removed by the given unique IDs to ensure anonymity.

3.9 Data Analysis

The data were analysed by using a thematic analysis approach. An initial a priori codebook was developed using deductive codes derived from the study objectives, interview guides, and relevant literature. As the analysis progressed, additional inductive codes emerging from the data were added to capture unanticipated findings and participants' perspectives. All transcripts were coded manually by the researcher. The coded data were systematically reviewed and compared to identify similarities, differences, and recurring patterns across participant groups. Related codes were grouped into broader categories and organized using data display matrices in Microsoft Excel. A thematic map was subsequently developed to explore relationships between categories and facilitate theme development.

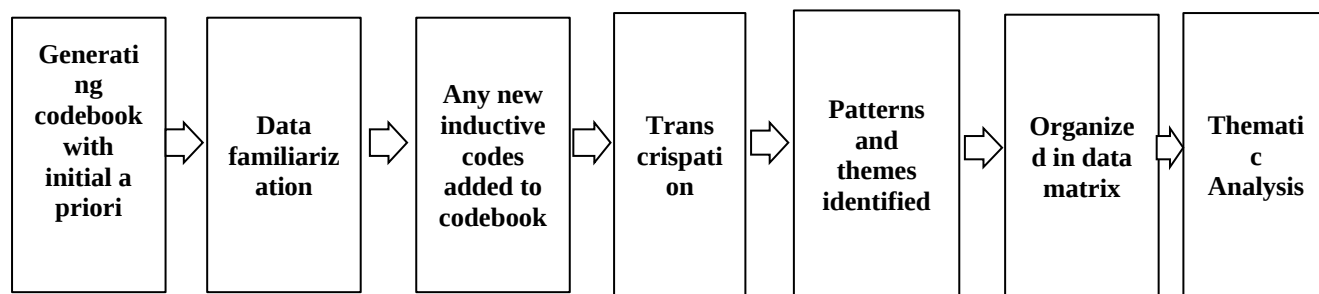


Figure 2: Qualitative data analysis plan

3.10 Triangulation of the findings

In this study, data triangulation was achieved by integrating four information-gathering methods: IDIs, KIIs, FGDs, and Observations to ensure the validity of the findings through in-depth information. While IDIs provided a detailed description of newborn care practice, their perception and FGDs also gave the cultural norms, practices, and perceptions of participants. Observations have provided real-time scenarios and patient-provider interactions of newborn care practice. Triangulation across methods showed that there were consistent themes of lack of care practises, traditional practises, role of family members and different factors. Findings across these methods revealed consistent themes, including gaps in recommended newborn care practices, the persistence of traditional practices, the influential and decision-making role of family members, and various contextual factors affecting care.

3.11 Ethical Considerations

This study received ethical approval from the Institutional Review Board (IRB) of BRAC James P Grant School of Public Health, BRAC University. Before the data collection, administrative approval was obtained from the Director of the MCHTI, Azimpur. Written informed consent was obtained from all participants before participation in the study. Participants were informed about the purpose of the study, the voluntary nature of their participation, the absence of any anticipated physical or psychological risks, and their right to decline participation or withdraw from the study at any stage without any consequences. Participants were also assured that their decision to participate or not participate would not affect any services they received. Financial incentives were

not given to participants. However, refreshments were offered to focus group discussion (FGD) participants in appreciation of their time and contribution to the discussions.

Confidentiality and privacy were maintained throughout the research process. Interviews and discussions were conducted in locations that ensured privacy, and all identifying information was removed from transcripts and study records during data management and analysis. Participants' names and designations were not mentioned anywhere; rather, it was replaced by unique identifiers.

All research materials, including audio recordings, transcripts, field notes, and related documents, were stored in password-protected electronic files accessible only to the researcher. Data were securely stored on the researcher's computer and in a password-protected university-authorised Google account. The collected data were used solely for this MPH thesis and were protected from unauthorised access throughout the study.

Chapter 4: Results

Background Characteristics of the study participants

Among the 16 participants, most mothers had secondary education, while fathers generally had lower educational attainment, with a notable proportion having no formal education (n=4). Their husbands were engaged in diverse occupations, including garment workers, drivers, small business owners, workers, and service-related jobs, while their monthly household income mostly ranged between BDT 13,000 and 25,000, indicating that most of them belonged to lower to lower-middle socioeconomic groups. Regarding parity, half of the participants had one child (n=8), while most others had two (n=7). The majority of births occurred at term, particularly between 38–39 weeks, with several reporting full-term pregnancy without specifying exact gestational age. These participants' deliveries took place in health facilities, with both NVD and C-section deliveries reported. The data provides (see Table 3) detailed information about their mode of delivery, education, income, parity, as well as the gestational age.

Out of 6 Health Professional key informants who were interviewed, one director, two clinicians, one nurse, one midwife, and one TBA. Most of the professionals were experienced, and they were from diverse backgrounds, with both clinical and community-based exposure to maternal and newborn care services.

In each group of FGD, around 8-9 participants were present. Participants were mainly young postpartum mothers aged 18–35 years. Most had completed education up to primary or secondary level, and the majority were housewives without formal employment. Like IDI participants, husbands of FGD women were primarily engaged in low-income informal occupations such as rickshaw driving, auto driving, tailoring, and other daily wage or small-scale jobs. Their household size ranged from 3 to 6 members, reflecting both nuclear and extended family structures. Participants had varying parity, mostly with 1–4 children. Both NVD and C-section experiences were represented, with deliveries occurring in both home and health facility settings, including government and private hospitals. Overall, participants largely represented lower to lower-middle socioeconomic backgrounds with limited formal education and reliance on informal household income sources.

Table 3: Demographic and Reproductive Characteristics of Mothers Who Participated in IDI(n=16)

Variable	Category/Range	Frequency (n=16)
Mother's Education	No formal education	1
	Primary	3
	Secondary	8
	Higher Secondary	3
	Graduate	1
Husband's Education	No formal education	4
	Primary	3
	Secondary	4
	Higher Secondary	4
	Graduate	1
Husband's Occupation	Service/Job holder	4
	Business	3
	Daily wage/ labour/factory/garments worker	7
	Driver (Laguna/CNG)	2
Monthly Income	13,000-16,000	6
	17,000-25,000	5
	26,000-40,000	3
	41,000- 60,000	2
Number of Children	1 Child	8
	2 Children	7
	3 Children	1
Mode of delivery	Caesarean Section (CS)	8
	Normal Vaginal Delivery (NVD)	8

Gestational age of the recent newborn at birth	36-37 weeks	2
	38-39 weeks	5
	40 weeks	1
	9 months and (unspecified exact weeks)	7

Mothers' Understanding of Essential Newborn Care

Views on Essential Newborn Care

The study findings showed that mothers had limited and sometimes incomplete knowledge of newborn care, including their needs, such as cord care, thermal care breathing support, and early initiation of breastfeeding. Many of them were unable to explain these newborn care practices clearly, that provide unclarity and a lack of understanding, as apparent through what they said during interviews and focus group discussions. One of them has mentioned,

“Actually, I don’t know much about these things. Since my babies were both delivered by C-section, I have never seen a normal delivery. I also don’t really know how the baby’s umbilical cord is cut or what is used for it.” - IDI 8_CS_Mother, age unknown, Parity 2

Ground Realities of Newborn Care in the First Hours of Birth

Cord Care

Cord care practice differed between hospital and home-delivered babies. In both settings, mothers had limited direct involvement in the cord care process. In a hospital setting, cord clamping and cutting were generally performed by healthcare providers such as nurses or *Khalas*. Most mothers were unaware of how these procedures were carried out. As most of the hospital-delivered mothers had limited knowledge regarding appropriate cord care practices, they were unable to explain how the umbilical cord care should be provided right after birth. One of the mothers shared,

“I do not have any idea about cord-cutting. Actually, I cannot say much about these things, and the hospital staff usually does the cord cutting and cleaning.” IDI 5, NVD Mother, Parity 2.

During the observation, it was noted that both C-section and NVD, *Khala’s* did cord clamping and cutting, and took care of the baby immediately after birth.

A similar pattern was observed in home birth, where *dais* - traditional birth attendants (TBAs) basically provided cord care to a newborn baby right after birth. In this context, the mother was not involved due to their physical conditions, and their family members took care of the baby along with *the dais* immediately after birth. As one of the FGD participants mentioned,

“The dai does all the work. The mother is unwell at that time and cannot see anything about newborn care. After she bathes, the baby is given to her.” --FGD 1, P6, NVD mother

Some more traditional practices related to cord care were still commonly followed at home births. Using a new blade, sometimes boiling it in hot water or heating it in the fire before use, tying a cord with threads, and apply some substance to the cord, like oil or boric powder, were mentioned. One mother shared her experience,

“They (dai) cut the cord with a clean blade and tie it with a thread. They clean it first with Dettol, apply oil, and keep it clean during bathing. The cord falls off in 5–7 days.” --IDI 6, NVD Mother, parity 2.

Though cord care was reported to be routinely practised in both settings, mothers did not have any involvement and had limited knowledge of appropriate and safe cord care. Only a few mothers had knowledge, which they gathered from informal sources, including family members or neighbours. This lack of knowledge led to unsafe practice, particularly in the home, where most of the mothers followed traditional cord care practices.

Thermal Care

The findings showed that the mother had limited involvement in newborn care practice. After immediate care procedures such as drying, cord clamping, and cutting, the baby was placed in a designated newborn care bed to maintain body temperature. Skin-to-skin contact between the mother and baby was rarely practised in both NVD and C-section births due to the mother's physical condition and the shortage of staff in the labour room. After delivery, the mother was kept in a separate room for observation, and the baby was kept in the designated place for a certain period. Then, the healthcare provider handed the baby over to the baby's family member. One of the healthcare providers mentioned,

“After the baby is born, we clean and dry the baby, wrap it with a new cloth, sometimes place it on the mother’s abdomen, and then keep it warmer by covering it with a blanket for around 30 minutes. ---KII 6, TTBA

While in-home delivered babies were immediately attended to, newborn care was mainly managed by *dais* (TBA). Although the baby was cleaned, dried and followed other care procedures, for maintaining body temperature, they provided the baby to the mother’s womb immediately rather than following any standardised method for thermal care. One of the FDG participants shared that,

“After cutting the umbilical cord, the birth attendants clean the baby thoroughly with a clean cloth and then give the baby to the mother’s womb” ---FDG 1, P3, female.

In a hospital setting, immediate thermal care was provided mainly by healthcare providers using standard procedure, whereas in homebirth, this care practice was carried out by *dais* applying their traditional knowledge.

Feeding Practices

Breastfeeding practices varied, especially in the early initiation of breastfeeding. Most of the mothers had partial awareness about the importance of colostrum. Mothers who had a normal delivery in a hospital setting, they fed their babies with colostrum early compared to mothers who had a C-section due to their physical condition. It was observed that caesarean mothers were kept in a separate room where family members’ entry was restricted. This hindered the initiation of breastfeeding within the first hour after birth and created delayed mother’s breastmilk flow. Because of it, some family members started giving honey or formula milk. One of the mothers mentioned that,

“Initial breastfeeding was initiated approximately two hours after birth. Basically, mothers were kept in a separate room for 24 hours. During this period, the newborn was brought to the mother by family members whenever the baby showed feeding cues or at scheduled feeding times” ----- IDI 8, CS Mother, parity 2.

At homebirth, some mothers breastfeed within one hour after birth. But due to the absence of immediate breastmilk flow, most mothers provided prelacteal feeding, such as sugar water, dates,

honey, cow/goat milk or formula milk as a supplement. These practices were shaped by the socio-cultural beliefs of their family members or older members. One of them mentioned,

“No, the baby did not receive breast milk immediately after birth and also up to three days, and cried a lot, was given small amounts of date or honey, and also tried to initiate breastfeeding” — FGD 2, P7, female.

Despite their awareness of the prelacteal not being good for babies' health before six months of age, it was reinforced not only by socio-cultural influence but also by religious beliefs. One of the mothers mentioned,

“Giving honey or dates is good for the baby, as mentioned in the Hadith and considered Sunnah. My mother-in-law advised giving honey or a pious person chewing a date and giving its juice. However, we follow this practice while also considering doctors' advice not to give anything before six months” — IDI 3, NVD mother, parity 2.

During the field observation, it was noted that some participants put honey in their newborns' mouths at the hospital and at home, while nurses at the hospital consistently advised them not to do so. In some cases, nurses also demonstrated correct breastfeeding positioning and attachment through practical demonstrations. However, many mothers did not follow these instructions owing to their inconvenience. After delivery, mothers often had limited mobility, so they tended to feed their babies in the most convenient way for them.

Breastfeeding practices in both home and hospital settings were influenced by maternal health conditions, health system barriers, cultural influences, and limited knowledge, showing suboptimal feeding practices. In the hospital, most mothers were physically weak and separated from their babies, especially the caesarean ones. As one mother explained,

“No, I don't remember anything as I was sick because of pain, so I don't remember anything about feeding and baby care after birth”-IDI 1, CS Mother, parity 1.

In the context of the home, where traditional practices dominated by older women influenced newly delivered women to give prelacteal feeding to the newborn babies. The ground realities of both hospital and home births delayed the initiation of breastfeeding on time.

Immunization

Newborn immunization is also important, as most of the mothers believe so. The findings indicated that in the hospital settings, newborn immunization and immediate health check-ups were routinely practised. Mothers said that in a hospital birth, it was very helpful as children get vaccinated, but in home births, a child does not receive any vaccines. On the other hand, because all the care was carried out by healthcare providers, mothers were often not informed what was being done and what types of injections or vaccines were given to the baby. One of the IDI participants mentioned, *“I vaccinated my previous child from outside, but after this baby was born in this hospital, the vaccine was given today. And also, an injection was given at the cord, so it’s good to be delivered at the hospital.”* ----IDI 6, NVD Mother, parity 2.

While in a home birth, the newborn did not get any vaccine or health check-up right after birth, the mothers tried to arrange a vaccine near their places due to their prior knowledge of the importance of vaccines for child health. Many of the participants gained this knowledge from their neighbours or family members, as the vaccine is universally considered good for children's health. During FGDs in the community, one mother also said,

“I have given two vaccines to my baby from the BRAC Health Care Centre. However, I did not know which diseases the vaccines were for..... They also said if the baby is vaccinated, then it will remain healthy” -- FGD 1, P 2, Home-delivered Mother.

Recognition of Danger Signs

Recognition and management of newborn danger signs differed between hospital and home settings. In both cases, mothers generally had limited knowledge about properly identifying newborn illnesses and danger signs. In hospital settings, healthcare providers were found to manage newborn illnesses immediately after the birth according to clinical guidelines, such as when a baby did not cry, had breathing difficulties, or showed changes in skin colour. To manage these conditions, health care providers took clinical interventions, such as close monitoring, stimulation, oxygen support, and suction. Mothers usually gained indirect knowledge by observing the baby's condition and the actions taken by the doctor rather than through health education and counselling. One key informant recounted the management of complications in the hospital,

“A newborn may appear bluish, may not cry, may pass stool, and may have saliva coming from the mouth. In most cases, nurses manage these situations, and the colour gradually changes from bluish to pink. Also, oxygen and suction are provided immediately if needed. If problems persist, a paediatrician examines the baby. The baby is then kept under observation, and once stable, is returned to the mother.” -----KII6, TTBA.

However, in home settings, mothers generally identified newborn illnesses based on visible signs and symptoms such as excessive crying, vomiting, fever, diarrhoea, reduced feeding, or cold-related symptoms. They did not follow any structured guidelines for identifying newborn illnesses. One of the FGD participants shared,

“During breastfeeding, the baby makes a lot of noise while sucking. The baby often vomits, has gas, and may have stomach problems. Sometimes I may refuse to feed and cry a lot. Then, it is understood that the baby is sick. The baby may also have a mild fever and feel slightly warm.” --- FGD 2, P5, female

Most mothers had minimal knowledge about newborn danger signs or health problems. When symptoms, such as fever or breathing difficulties, appeared, they initially practised home-based care, including using sanctified water, and often sought treatment from informal providers, including a traditional healer (*kobiraj*), and a local pharmacist. One mother said,

“After my baby was born, he cried a lot. Then a traditional healer gave some water, and an amulet was put on the baby. Then, the baby became fine.” ----FGD 1, P3, female

There are many reasons for existing practices for newborn illnesses or recognising their danger signs right after birth. Many of the mothers did not have a clear knowledge of newborn illness, especially the first-time mothers. While some mothers reported basic knowledge and experience of newborn danger signs, they would seek help from healthcare providers in case of critical complications. Overall, despite limitations in hospital care, systematic and timely care was often provided to newborns during hospital births. On the other hand, in home births, as newborn danger signs were not known and mothers relied on symptoms and signs, newborn care was often delayed.

Health System Capacity and Resource Constraints

Shortage of Human Resources

Shortage of human resources was identified as a major problem for providing quality newborn care. It was found that the lack of healthcare providers, nurses, and supporting staff created excessive workload, even if they were available in the hospital. But the absenteeism of healthcare providers on every shift affected both emergency and routine care services. Newborn care services, such as providing oxygen on time and timely management, were often hampered or delayed, leading to a negative impression about the healthcare provider and dissatisfaction. Despite many challenges, the available staff tried their best to provide services and support to the patients in the hospital. Yet, scarce manpower was a fundamental issue in continuing proper ENC care for newborns at the hospital. One of the healthcare providers mentioned,

“Manpower is very limited in every sector here; we need more doctors, nurses, senior staff nurses, as well as cleaning staff. You can believe we are working with only 10% of the required workforce. Manpower is needed as first and foremost, without sufficient manpower, it is impossible to run services properly”. ---KII 3, healthcare provider.

During the observation, it was noted that the *Khala (TTBA)* took immediate care of the newborn after birth. This scenario showed it was largely due to staff shortages; in the labour room, only one nurse managed deliveries, while a midwife attended to admitted mothers, and in the operating theatre (OT), only single nurse assisted doctors during procedures. As a result, the workload became disproportionately concentrated on a limited nursing staff, necessitating the involvement of *Khalas* to provide newborn care immediately after birth.

Shortage of Equipment, Medicine and Infrastructure Gaps

Multiple factors were found to affect the health system's ability to deliver quality newborn care immediately after birth. While the participants emphasised that human shortage hindered proper newborn care, staffing was not the only challenge. The combined lack of essential medicines and equipment undermined newborn care services in hospital settings. In particular, the absence of a neonatal intensive care unit (NICU), shortage of functional equipment, fewer oxygen cylinders, and prolonged interruption of medicine supply disrupted and delayed the provision of newborn care services. One healthcare provider stated,

“This hospital does not have enough doctors or nurses, so healthcare requires team effort; the quality of service has declined. Moreover, for a long time, there has been a shortage of equipment that is not available. The medicine supply is not on time. This overall shortage of logistics, medicine, and other essential things as a whole creates a problem in providing quality newborn care in these facilities.” --KII 1, healthcare provider

Overall, the combined effects of insufficient infrastructure, unreliable medicine supply, and shortages of human resources posed significant challenges to ensuring proper and quality newborn care services at the facility level.

Counselling and Continuity of Care: Provider-caregiver interaction

There were significant gaps in counselling and continuity of care, which were evident in patients-provider interactions. Many mothers shared that they did not receive any counselling on newborn care during their antenatal visit and after delivery, highlighting health service gaps in the facility. Most mothers did not receive proper information on newborn hygiene, breastfeeding, immunisation, or recognition of danger signs, which directly affected their seeking of proper newborn care after birth. Some mothers only received partial counselling, primarily focused on maternal health, and breastfeeding technique and positioning, often constrained by staff's heavy workload and time. One mother who was delivered at the hospital mentioned,

“When I went for check-ups here, they did not provide much advice on newborn care but told me to take care of myself and eat nutritious food. After birth, they advised bathing the baby after the cord falls off, avoiding oil application, and giving morning sunlight.”-IDI 7, CS Mother, Parity 2.

Due to the challenges within the health system, many mothers were found to depend on online sources, such as YouTube, Facebook, and other social media. Some largely depended on family members or prior experiences, which often perpetuated traditional practices and misconceptions about newborn care. At the same time, many mothers interviewed were more educated than in previous generations, which began to change their perception of newborn care and health-seeking behaviour. One of the healthcare providers further noted,

“Urban area mothers are relatively more aware, and their knowledge has increased through online access, such as Facebook and YouTube. Also, now mothers are more educated, and they know many things about newborn care, which they learned through regular check-ups with doctors during their pregnancy.” —KII 6, healthcare provider.

Mothers who delivered in the health facilities frequently shared that they did not receive adequate guidance on newborn care, even after delivery. This was reaffirmed by observational data suggesting inadequate guidance on vaccination, newborn danger signs, and breastfeeding. This lack of counselling left them frustrated and reliant on their family members, continuing traditional cultural practices.

Chapter 5: Discussion

Summary of key findings

This qualitative study addressed the current state of newborn care practice in both facility and community settings, where recommended ENC practice based on the WHO guideline for newborn care immediately after birth differs. While mothers and their caregivers had basic knowledge of newborn care, there were significant gaps in its proper application, specifically among home-delivered mothers. At the community level, family members played a significant role in influencing the care-seeking behaviours and decision-making, reinforced by traditional practices. The findings also showed that most of the mothers believed newborn care was important for newborn survival, but many of them had fragmented and incomplete understanding of ENC components such as cord care, thermal care, early initiation of breastfeeding, and immunization. Those mothers who had a hospital delivery generally reported receiving better newborn care, but some variations were noted. Inadequate facility readiness and counselling services were observed, which are critical to ensure the quality of newborn care. The observational data reported inconsistencies between guidelines-based newborn care and actual practices in health facilities. Despite adequate knowledge of healthcare providers on newborn care practices, they faced several challenges, such as workload, resource constraints, and lack of coordination across the different levels of care.

Discussion of the findings

Despite improvements in coverage of maternal and newborn health services, significant gaps remain in the quality and continuity of newborn care. The findings highlight missed opportunities across the continuum of care, including the implementation of recommended essential newborn care practices at birth, provision of effective caregiver counselling, recognition of neonatal danger signs, and access to appropriate postnatal care and treatment services.

Mothers at the level closest to newborn care practices showed minimal knowledge of several important components of newborn care, even though they gave birth in health care facilities and, in many cases, had already given birth. In the areas of cord care, thermal care, nursing, immunization, and identifying newborn danger signs, knowledge gaps were noticeable. Likewise, findings have been reported in Bangladesh and other low- and middle-income countries (LMICs),

where mothers often lack adequate awareness of neonatal danger signs and recommended infant care guidelines (Bayih et al., 2020; Gul et al., 2014). Similarly, inadequate maternal awareness of critical newborn care and warning signs has also been observed in the South Asian context, which may cause a delay in proper newborn care for sick newborns. (Gul et al., 2014; Azad et al., 2023). Moreover, evidence from other LMICs also reveals that mothers have minimal awareness of newborn danger signs, especially feeding difficulties, hypothermia, and other signs and symptoms of infection (Gyan et al., 2017; Kebede et al., 2020). The majority of mothers in this study believed in the importance of newborn care, but many were unable to identify evidence-based danger signs or explain recommended ENC practices. This suggests that facility delivery alone may not ensure optimal maternal knowledge without effective counselling and postnatal health education.

These limited understandings were revealed with the strategies practiced to provide care after childbirth. Along with the newborn, mothers and caregivers often relied on commonly observed symptoms such as high fever, vomiting, poor feeding, excessive crying, and weakness instead of identifying proper newborn danger signs by any professional healthcare provider. Additionally, family members mostly sought treatment and guidance from the nearest local pharmacy, traditional healer, and other informal providers. Consistent with the present findings, previous studies from South Asia have shown that limited awareness of newborn danger signs among caregivers and family members contributes to delayed recognition of newborn illness and persistence of traditional care practices (Abdullah et al., 2021; Gul et al., 2014). This limited recognition of newborn illness often influences subsequent care-seeking pathways, leading families to rely on informal sources of care before accessing the qualified healthcare services.

A study from Bangladesh shows that families commonly seek treatment from local doctors, drug vendors, or traditional healers before seeing qualified healthcare professionals because they interpret neonatal sickness based on visible signs and symptoms (Billah et al., 2018). These delays in seeking appropriate care are further influenced by household factors, such as decision-making regarding newborn health made within families.

In LMIC countries, along with India, Pakistan, and Nepal, the risk of newborn morbidity and mortality increases due to delays in receiving appropriate and effective care caused by complicated

household decision-making processes and a lack of awareness of neonatal danger signs. (Herbert et al., 2012). The dynamics of household decision-making, especially the impact of husbands, mothers-in-law, and other senior family members, were crucial in determining how newborn care practices were shaped and whether or not recommended practices that were introduced at health facilities were adopted and maintained after returning home (Shimpuku et al., 2021).

Beyond household influences, experiences within the health system also played an important role in shaping newborn care practices and the continuation of recommended newborn care after birth. Newborn care practices were greatly influenced by experiences in the healthcare system, especially during childbirth and the early postnatal period. There were still significant gaps in the delivery of recommended critical newborn care, even though facility-based deliveries generally ensure safer delivery methods and greater access to maternal and newborn health services. Skin-to-skin contact was infrequent in the current study, particularly after caesarean sections, and early breastfeeding initiation was commonly postponed because women and newborns were routinely separated after delivery. The similar outcomes have been reported that in other countries, like LMICs where caesarean delivery is consistently associated with delayed breastfeeding initiation, reduced skin-to-skin contact, and missed opportunities for early mother newborn bonding (Fadl & Haile, 2021).

The findings showed that there were substantial gaps in counselling during the ANC and PNC care, particularly about breastfeeding, cord care, immunization, hygiene practices, and recognizing newborn danger signs. Because of this, the majority of mothers relied on unofficial information sources like neighbours, family, prior experiences, and online resources. Similar patterns were seen in Uganda, where women recognized medical professionals as reliable sources of knowledge on newborn's health; however, little discharge counselling and little health education hindered caregivers' capacity to carry out the advised newborn care procedures at home (Namazzi et al., 2022). Likewise, LMIC countries like Ethiopia have found that mothers who have received ANC and PNC counselling had a significantly better understanding of newborn danger signs and basic newborn care compared to those who did not receive (Ayele et al., 2022). These findings also indicate that caregivers' understanding, trustworthiness and adaptation of evidence-based newborn care practices are significantly influenced by the standard of care and consistency of patient-provider interactions.

The study findings also reveal a number of difficulties with the health system that have an impact on the standard of newborn care services. It was suggested that a lack of healthcare workers, physicians, essential drugs, equipment, oxygen support, and specialized newborn care services would significantly hinder the provision of high-quality care. Similar problems have been reported in Bangladesh and other low- and middle-income countries, where a shortage of workers, inadequate infrastructure, and limited funding continue to hinder maternity and infant health services. (Kruk et al., 2018). Moreover, another study has shown that in Bangladesh, healthcare facilities faced multiple challenges which affected the quality of care, including poor working environment, shortage of staff, inadequate equipment and medicines, communication gaps and insufficient training; these significantly affected newborn care services (Ara et al., 2026). Consistently, another study in Uganda also found the same inadequate investment in the health sector, shortage of medicine and equipment, and poor infrastructure can negatively affect (Magunda et al., 2023).

However, these constraints hindered immediate care given to neonatal complications, increased provider burden, and reduced possibilities for effective counselling. Yet another instance of how staff shortages impact regular service delivery is the dependence on supported workers and traditional birth attendants for first newborn care. These findings highlight the need to strengthen health system readiness through increased investment in infrastructure, human resources, necessary supplies, and supportive monitoring in order to improve the quality of newborn care services (WHO,2016).

Newborn care practices were significantly influenced by sociocultural norms, societal norms, and community beliefs in addition to individual behaviours and healthcare experiences. Traditional cord care techniques were still commonly utilized, especially by families who gave birth at home. Even if more people have access to institutional delivery facilities, long-standing cultural beliefs that still affect caring behaviours are shown in the administration of products like oil, boric powder, or other substances to the umbilical cord. Similar practices have been linked to an increased risk of newborn sepsis and cord infection in the South Asian context (Mullany et al., 2006).

Newborn feeding techniques were also influenced by cultural and religious beliefs. Elderly family members often encouraged continuing the practice of traditional prenatal feeding, such as honey, dates, sugar water, and formula milk, because they were thought to be better for newborns. Similar

findings from earlier research have shown the importance of grandmothers, mothers-in-law, and other senior household members in influencing family decisions on baby care and feeding (Aubel, 2021). These findings imply that newborn care practices are grounded in wider social and cultural contexts, where the adoption of recommended newborn care behaviours may be facilitated or impeded by established decision-making processes, traditional family practices, and cultural norms.

The newborn care practices are influenced by the interactions between maternal knowledge, family support, and health system factors. The findings demonstrate that important opportunities to further improve newborn care can be achieved through strengthening maternal and family awareness, enhancing the quality of counselling and postnatal support, and ensuring delivery of newborn care practices within the health facilities and communities. However, these gaps could lead to better neonatal health outcomes, immediate care-seeking, and improved diagnosis of newborn illnesses.

Strengths and Limitations of the Study

In this study, multiple qualitative data collection methods were used, including IDIs, KIIs, FGDs and non-participant observations. Through enabling the comparison and validation of data from multiple sources, methodological triangulation, which improved the findings' credibility and reliability, had been made feasible by the use of various kinds of approaches. Data were collected from a range of stakeholders, including mothers, family caregivers, healthcare providers, and health managers, allowing for a comprehensive exploration of newborn care practices across both health facility and household contexts. Direct observation of newborn care practices strengthened the study by providing contextual insights and allowing the researchers to compare actual practices with participants' reports and established clinical guidelines.

There were some limitations to this study as well. The study was conducted in a single healthcare facility and one urban community in Dhaka; the findings may not be applicable in other settings, particularly in healthcare organizations with different quality of service contexts. Purposive sampling may not have fully captured the variety of experiences related to newborn care practices, even though it is appropriate for qualitative research. Mothers who recently delivered were interviewed during the postnatal period, when some participants experienced difficulties with pain

and discomfort, fatigue, or emotional stress. This could have affected the accuracy of recall and the depth of responses. Additionally, because the study depended on self-reported data from mothers, relatives, and medical professionals, the results are vulnerable to social desirability bias and recall.

Additionally, the researcher's presence during observations might have affected how health care providers behaved, leading to procedures that differed from traditional care. There were additional difficulties in collecting data during Ramadan since some participants had limited time because of household responsibilities, which would have impacted the depth of discussion.

Implications for Public Health Policy and Practice

The findings of this study highlight the necessity of improving the adoption of ENC guidelines in Bangladesh at the health and community levels. Improving the quality of counselling during ANC and PNC visits can improve mothers' knowledge and practices on newborn care. However, increasing counselling and guidance could enhance breastfeeding techniques and optimal potential growth, immunity and survival of newborns. Ensuring proper cord care, appropriate vaccinations, and early detection of newborn danger signs should also be focused on. Findings also highlighted that the family-centric health education intervention was needed, as family members such as husbands, mother-in-law play a significant role in newborn care decision making that may influence traditional care practices, cultural norms and household dynamics (Aubel, 2011). In addition, strengthening health system capacity through adequate staffing, regular training and supportive supervision of healthcare providers, and ensuring the availability of essential medicines, supplies, and equipment are necessary to improve the quality of newborn care services. Given the increasing dependence on digital platforms for health information, the development of evidence-based health education and awareness programmes in Bangla may help improve public access to accurate information and reduce misinformation related to newborn care. Furthermore, strengthening postnatal follow-up mechanisms and expanding community-based newborn care services could further enhance continuity of care between health facilities and community levels. Together, these measures have the potential to contribute to reductions in neonatal morbidity and mortality and support progress towards achieving Sustainable Development Goal (SDG) 3.2 and the targets outlined in Bangladesh's national newborn health strategies and guidelines.

Chapter 6: Conclusion and Recommendations

Conclusion

The majority of mothers perceived that newborn care is important for newborns' survival and their healthy growth. Yet, their understanding of essential newborn care remained incomplete and fragmented, and newborn care practice was strongly influenced by socio-cultural beliefs and traditional practices. In this health facility, health system factors, including a shortage of trained staff, medicine, and essential equipment's, also affected quality newborn care. Despite health system challenges, mothers showed positive attitudes toward facility delivery as their babies received more services right after birth. Overall, the findings suggest an urgent need to address health system issues and raise awareness of newborn health care. Although data were collected from limited areas in Dhaka, the scenario is not exceptional compared to other urban and rural areas in Bangladesh. The key priority of the government is to invest in newborn health care. The overall investment in health facilities and communities in newborn care will improve the quality of care and community awareness, which will eventually impact the health outcomes of newborns.

Recommendation

Based on the study findings, there are many recommendations can be proposed to improve the newborn's health outcome in Bangladesh.

Firstly, mothers lack of knowledge on ENC practice, which is strongly shaped by socio-cultural beliefs and traditional practices perpetuated through family influence. To address this, it is important to develop community-based awareness programs targeting mothers, husbands, grandmothers, and mothers-in-law regarding safe newborn care practices. Avoidance of pre-lacteal feeding, exclusive breastfeeding, and timely care-seeking for newborn danger signs should also be considered. Utilizing community health workers and creating digital platforms may improve accessibility to accurate and appropriate newborn care information.

Secondly, the proper utilization of national and facility-level implementation of the WHO essential newborn care guidelines should be mandatory. Moreover, health system gaps in health facilities need to be addressed to ensure quality newborn care. Integrating counselling on newborn care into routine antenatal and postnatal care services should also be considered at all healthcare facilities.

In addition, continuing education programs, such as regular refresher training, should be arranged for healthcare providers in hospital settings. More importantly, supervision and monitoring should be improved in healthcare facilities to ensure that the recommended essential newborn care guidelines are followed properly and consistently.

To understand newborn care practices better in urban areas and to develop culturally appropriate interventions, further in-depth studies are required, supported by implementation research on newborn care.

Declaration of GenAI Use

This study follows ethical principles to ensure responsible, transparent, and safe use of Artificial Intelligence (AI) tools throughout the research process. AI technologies are used only as supportive tools.

I (Azima Khatun) declare that in preparing this thesis, I used ChatGPT (OpenAI, GPT-5.5, Gemini, May 2026) as a support tool to assist with brainstorming ideas, organising the structure of the writing, paraphrasing, and improving clarity and language in the text that I drafted myself. In this study, GenAI was used for mind mapping regarding protocol writing, translating the data collection tools. However, the data collection tools were initially developed in Bangla by the researcher and were subsequently translated into English using Gemini to ensure clarity and consistency. Following this, all translated tools were manually cross-checked and reviewed by the researcher to maintain accuracy, contextual appropriateness, and sensitivity. This fidelity check ensured that the original meanings, intent, and nuances of the Bangla tools were preserved and that no AI-generated content altered the research objectives or interpretations.

For the participants' rights to privacy and confidentiality, no personal information is shared or processed with AI. All material used with AI tools was fully de-identified, and any names, locations, personal identifiers, or contextual details that may potentially identify participants were removed before using AI tools for translation purposes. AI was not used during data analysis or interpretation of findings, but was solely used for data translation from Bengali to English.

GenAI was not used to generate original arguments, interpret findings, analyse data, or produce final academic content independently. All substantive ideas, interpretations, references, analyses, and conclusions presented in this work are my own and have been independently reviewed and verified in accordance with the academic integrity guidelines of the BRAC James P Grant School of Public Health (JPGSPH).

All original data will remain securely stored in password-protected drives under the control of the researcher and research team in accordance with institutional and ethical guidelines.

The researcher retains full responsibility for the accuracy, integrity, and ethical conduct of the study. The use of AI is limited and aligned with ethical standards to ensure that participant autonomy, privacy, confidentiality, and well-being are fully respected throughout the study.

Overall, the use of AI in this study is ethical, minimal, and carefully monitored, ensuring that it enhances research quality without compromising data integrity or participant protection.

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