Barriers and Enablers in Implementing Tele-Counselling for Postnatal Care of Low-Birth-Weight Infants in Rural India: A Qualitative Study

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Abstract:

Introduction: Tele-counselling may emerge as a promising strategy for improving neonatal outcomes in low-birthweight (LBW) babies especially in resource-constrained settings. **Objective:** To explore barriers and enablers in implementing tele-counselling for caregivers of LBW infants in a rural Indian setting drawing insights from a community based interventional study. **Methods:** This qualitative study was nested within a larger community based interventional study, conducted in Agra, Uttar Pradesh, the qualitative component is presented. Tele-counselling was provided to caregivers of 40 LBW infants over eight weeks selected consecutively. Data related to challenges were collected through in-depth interviews and analysed by thematic analysis, supplemented with qualitative reflections and case narratives. **Results:** Key barriers included poor network coverage (35%), lack of willingness to talk (35%), time constraints (25%) and comprehension difficulties (7.5%). Enablers included ASHA worker involvement, flexible scheduling and personalized support. Six themes emerged: technological barriers, communication and comprehension gaps, trust and reluctance, time constraints and competing priorities, role of Community Health Workers, and personalization and case-based support. **Conclusion:** Despite technological and behavioural barriers, tele-counselling can serve as an effective postnatal intervention tool when combined with trust-building, flexible timing and collaboration with frontline workers. Tailored counselling, regular follow-up and community integration are critical for success.

Keywords: Communication barriers, Counselling, Low birth weight, Neonatal care

Introduction:

Low birth weight (LBW) defined as birth weight less than 2500 grams by World Health Organisation (WHO), remains a significant public health concern.[1] Globally, one in seven infants born is LBW infant.[2] Despite progress in neonatal care, India continues to report a high prevalence of LBW, with rate remaining stagnant at approximately 18% according to both NFHS-4 and NFHS-5 data.[3]

Because of their higher risk of death and long-term developmental issues, LBW babies require specialised care and postnatal monitoring. However, access to quality postnatal care in India, particularly in rural and underserved areas is often limited due to geographic, infrastructural and workforce related barriers. This creates a critical gap in early neonatal support, particularly vulnerable infants requiring consistent follow up. The practice of tele-counselling is widely

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used and accepted globally, commonly utilized by mental health professionals worldwide, has significant potential in this realm. By leveraging telecommunications technology, healthcare provider can offer guidance, support and monitoring to caregivers remotely, thereby overcoming geographical and logistical barriers. Synchronous video tele-consultations may increase the postnatal follow up of low-risk neonates, addressing common concerns like lactation and skincare.[4]

The adoption of tele-counselling faces several operational and technological challenges.[5] Understanding these challenges to enhance tele-counselling interventions is essential for developing effective and sustainable models of care. Hence, this study was conducted to explore barriers and enablers in implementing tele-counselling for caregivers of LBW infants in a rural Indian setting drawing insights from a community based interventional study.

Methods:

This qualitative study was nested within a community based interventional study conducted in a selected block of Agra district, Uttar Pradesh, India. The broader intervention aimed to assess the impact of tele-counselling on postnatal care practices among caregivers of LBW neonates. The qualitative component focussed on identifying implementation barriers and facilitators through descriptive and thematic analysis.

The study included caregivers of all neonates with a birth weight less than 2500 grams born between 15th March 2024 to 15th June 2024 at the selected Community Health Centre and discharged for home care. Neonates who were severely ill at birth or who could not be followed up were excluded. Of the 87 eligible LBW neonates enrolled consecutively in the larger study, 44 LBW neonates were assigned to the intervention group using alternate allocation. After accounting for four losses to follow up, 40 caregivers in the intervention arm completed the tele-counselling and were included in the qualitative analysis.

Participants in the intervention group received structured tele-counselling focussed on key newborn care practices: exclusive breastfeeding, thermal protection, hygiene practice, timely vaccination and identification of early danger signs. Counselling was delivered by a trained investigator over a two-month period. Each caregiver received two calls per week during the first month and one call per week during the second month. Calls were scheduled flexibly and where appropriate, ASHA workers provided additional multimedia support.

Data on implementation challenges were collected through structured checklists completed after each call, as well as open ended notes and reflections maintained by the investigator. Call metrics including timing, duration and frequency were also recorded. Case narratives were developed for caregivers who experienced notable difficulties or required individualized support. These case studies highlighted contextual challenges and adaptations made during the intervention.

The qualitative data were analysed using Braun and Clarkes reflexive thematic analysis framework.[6] Study notes and narratives were reviewed manually to generate initial codes, which were then grouped into subthemes and refined into overarching themes. Patterns were identified inductively with attention to both barriers and facilitating factors. Triangulation was achieved through investigator observations, ASHA feedback and caregiver interviews to ensure data credibility and depth.

Written informed consent was obtained from all participants prior to enrolment. The study received ethical clearance from Institutional Ethical Committee of a tertiary care institute (Reg no. ECR/1409/Inst/UP/2020) through Letter number SNMC/IEC/2024/203 dated 02/02/2024.

Results:

The table 1 summarises the sociodemographic details of LBW neonates (N=40). Among the 40 caregivers in the intervention group, the most frequently reported challenges were lack of network coverage and unwillingness to talk. The Table 2 gives the detailed list of challenges faced during tele-counselling sessions.

The calls were most successful during the evening hours (6:00 PM to 8:00 PM) as this was the time when all the family members were at home, the working members

Table 1: Sociodemographic details of study participants (n=40)

Variables	No of participants (%)
Age of mother (Years)	
< 20	2 (5.0)
20-24	19 (47.5)
25-29	18 (45.0)
≥ 30	1 (2.5)
Educational Qualification	
Illiterate	10 (25.0)
Primary, Middle or High School	18 (45.0)
Intermediate or above	12 (30.0)
Occupation	
Clerical/ shop	1 (2.5)
Unskilled worker	1 (2.5)
Housewife	38 (95.0)
Socioeconomic Status*	
Upper Class	1 (2.5)
Upper Middle Class	2 (5.0)
Middle Class	11 (27.5)
Lower Middle Class	26 (65.0)
Lower Class	0 (0.0)
Gender of neonate	
Male	21 (52.5)
Female	19 (47.5)

*As per modified prasad classification

Table 2: Challenges faced in providing tele-counselling to the Intervention group (n=40)

Challenges faced	No. of participants (%)
Lack of access to phone	2 (5.0)
Lack of network coverage	14 (35.0)
Lack of willingness to talk	14 (35.0)
Lack of trust	2 (5.0)
Lack of comprehension over phone	3 (7.5)
Lack of time	10 (25.0)
Lack of family participation/ family support	1 (2.5)
Lack of compliance	10 (25.0)
None	5 (12.5)

Table 3: Tele-call metrics over 8 weeks intervention

Metric	Value
Mean duration of call	11.8 minutes
Maximum duration	23 minutes
Minimum duration	6 minutes
Mean number of calls per day	6.62
Minimum number of calls per day	1
Maximum number of calls per day	8
Total number of effective calls	480
Total number of dialed calls	1135

of the family has returned by this time and thus families were equipped with the mobile phone. Also, the ASHAs of the respective area were also comfortable to answer the call during this period. Regular follow ups helped in building rapport and trust. The Table 3 provides details of calls for providing tele-counselling to the intervention group. To make 480 effective calls, 1135 calls were dialled, indicating 42.3% effectiveness rate.

Six major themes emerged from the inductive thematic analysis using Braun and Clarkes framework.

1. Technological barriers: issues like poor network coverage, lack of access to phones and inconsistent signal reception were prominent.

   1.1. Inconsistent mobile network coverage

   "Madam, your voice cuts in between, I had to go out of my house to hear you" -Mother 3

   1.2. Limited access to personal phones

   "I am at work now; my wife doesnt have a phone. Call us in the evening" -Father 5

   These barriers disrupted call continuity and flow of counselling, requiring flexible scheduling and repeated attempts to establish contact.

2. Communication and comprehension gaps: Some caregivers, particularly with low literacy faced difficulty in understanding medical instructions over phone. Audio-only communication limited the ability to explain complex topics.

   2.1. Limitation of audio-only communication: the most common response was difficulty in understanding instructions over phone.

   "You told me about danger signs, but I cant understand all. Can you tell again slowly." Mother 13 (23 years, primary school education, housewife)

   2.2. Low health literacy among caregivers: the least common response pertained to specific misconceptions or hesitancy regarding vaccination.

   "Hmm… I did not understand the need for vaccine….it is painful for my child" -Mother 34 (21 years, illiterate, housewife)

This highlights the need for simplified messaging and where possible, multimedia reinforcement through ASHAs.

3. Trust and reluctance: Initial hesitancy and distrust toward telephonic health advice were common. However persistent efforts and respectful communication helped build rapport and trust over time.

   3.1. Initial distrust towards telephonic counselling

   "I know what is right and what is wrong for my baby, we dont need anyone to explain her needs."- Mother 9

   3.2. Building rapport through consistent, respectful communication

   "We are trying to help you and your child."- Investigator

4. Time constraints and competing priorities: Many caregivers found it challenging to prioritize counselling sessions. Flexibility in timing played a crucial role in addressing this challenge.

   4.1. Household responsibilities

   "I have to cook food for my family, I cannot talk to you now" - Mother 23

   4.2. Flexible call timing and investigator patience as enabler

   "No problem, I can call you whenever you are free"- Investigator

5. Role of Community Health Workers (ASHAs and ANMs): The involvement of ASHA workers significantly enhanced the reach and credibility of tele-counselling. Their physical presence complemented the remote guidance provided by the investigator.

   5.1. ASHA as a trusted link between system and household

   "You can ask for any assistance regarding you and your child, the doctor has called to ensure that you and your baby is healthy" - ASHA 1

   5.2. Support in explaining complex concept visually

   "I can help by showing the videos and images on the tablet provided by the government for feeding data"- ASHA 4

6. Personalization and case-based support: Caregivers appreciated when the counselling was adapted to their specific concerns. Tailored advice addressing individual concerns like feeding challenges, or minor medical conditions helped to build trust and improved satisfaction of the caregivers.

   6.1. Customized advice for individual health needs

   "Continue breastfeeding and feed frequently from the affected side, it would help to reduce soreness" -Investigator

   6.2. Perceived satisfaction by caregivers

   "Your advise helped to reduce the soreness"- Mother 6

Case Narratives:

Case 1: Tailored advice for maternal health:

One of the caregivers, a young mother reported symptoms suggestive of uterine prolapse during the tele-counselling sessions. Recognizing her discomfort, the investigator provided the tailored advice that included Kegels exercises. A video demonstrating the technique was shared with the help of her local ASHA. Over a course of a month, her symptoms significantly improved without requiring any medical intervention.

Case 2: Eye care for the newborn

A mother expressed concern regarding her infants decreased lacrimation. Upon further probing, it was found that the infants eyes were being treated with kajal, a common traditional practice. The investigator advised discontinuing kajal application, advised Crigler massage (lacrimal sac massage) during a phone call, shared a video of same with the help of ASHA worker and coordinated with her to arrange a visit to nearest healthcare centre for appropriate treatment by ophthalmologist. This case emphasizes the role of tele-counselling in correcting harmful practices and facilitating access to specialist care.

Case 3: Survival of high-risk LBW neonate at home

A particularly inspiring case was that of a female LBW neonate with a birth weight of approximately

1500g, who, despite not being taken to any healthcare facility, survived with the combined efforts of her family, ASHA, and the tele-counselling support provided. The family was initially hesitant about hospital visits due to logistical and financial constraints, and the infant was managed at home. Through tele-counselling, the family was continuously guided for essential care such as optimal breastfeeding practices, thermal protection to prevent hypothermia, skin-to-skin contact, and to identify warning signs requiring immediate medical attention. The ASHA worker played a crucial role in bridging the gap by making home visits, monitoring the baby's weight, and reassuring the family about the recommended care. Over time, the combined efforts of tele-counselling, ASHA intervention, and the family's dedication ensured that the neonate not only survived but gradually gained weight and showed positive growth indicators.

Discussion:

This qualitative study explored the implementation challenges of tele-counselling intervention designed to support caregivers of LBW neonates in rural India. Our findings highlight that while tele-counselling holds significant promise for strengthening postnatal care delivery, its effectiveness is shaped by contextual barriers. Technological constraints were the major challenges, and this aligns with the findings of a similar study by Cox V et al.[7] in rural Northern India, where limited internet connectivity hindered effectiveness of mobile health interventions. Lack of access to personal mobile devices further complicated communication, also noted in a study focussing on tele-medicine in resource limited setting by Haffner DN et al.[8]

Communication barriers further impeded the effectiveness of tele-counselling. Audio only interactions restricted the ability to convey complex health messages, especially in the absence of visual or in person cues. This is consistent with global telemedicine experience by Kruse CS et al.[9] that highlight the limitations of unidimensional communication modalities in conveying nuanced care instructions. Providing multimedia support through ASHAs such as short video demonstrations, helped address this issue in our setting and may be considered essential in similar interventions elsewhere.

Building trust was another crucial factor. Some caregivers initially showed reluctance or resistance to receiving health advice via phone, especially from unfamiliar voices. Establishing rapport required repeated contact, respectful engagement and reinforcement through trusted local health workers. Similar findings have been reported in other mHealth study by Mehl G et al.[10] where credibility and local buy in were key to user adherence.

Time constraints and competing household priorities also affected caregiver availability for counselling sessions. This challenge was mitigated by offering flexible call timings, particularly during evening hours when families were more likely to be at home. Flexibility has been recognised in implementation literature as an important adaptive strategy for demand side engagement in telehealth models in a study by Wootton R.[11]

Importantly, the integration of frontline health workers was consistent enabler of tele-counselling success. ASHAs and ANMs not only facilitated mobile contact but also enhanced the interventions credibility, provided on ground reinforcement and enabled multimedia sharing to complement verbal instructions. This hybrid model of combining remote and community-based support represents a scalable systems level strategy to strengthen postnatal care outreach. The personalised and case specific counselling as illustrated through caregiver narratives fostered greater acceptance and practical application of health advice. Tailoring support to specific needs enhanced caregivers satisfaction and may contribute to improved health outcomes.

Together these findings reinforce the potential for tele-counselling to serve as a valuable tool for existing postnatal care in resource limited settings. However, for such interventions to be effective and sustainable, they must be embedded within broader health system infrastructure, supported by reliable technology, trained personnel and community engagement mechanisms.

Conclusion and Recommendations:

This study highlights that while tele-counselling holds significant potential as a postnatal support tool for caregivers of LBW neonates in rural India, its effectiveness is shaped by multiple implementation challenges. Technological barriers, communication limitations and trust deficits emerged as key obstacles. However, these can be mitigated through flexible call scheduling, involvement of community health workers and personalised counselling approaches. Integrating tele-counselling into existing community health systems, particularly through ASHAs, can enhance its reach, credibility and impact. Policymakers may strengthen rural digital infrastructure, incorporate tele-counselling training in ASHA and ANM curriculum and promote use of simplified communication tools that include audio-visual aids. As health systems increasingly explore digital strategies to bridge service gaps, particularly in resource-limited settings, our findings emphasize the importance of designing interventions that are context sensitive, community-integrated and responsive to user needs.

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References:

1. World Health Organization. Low birth weight [Internet]. Geneva: World Health Organization; 2023. Available from: https://www.who.int/data/nutrition/nlis/info/low-birth-weight
2. UNICEF, World Health Organization. UNICEF-WHO low birthweight estimates: levels and trends 2000–2015 [Internet]. New York: UNICEF; 2019. Available from: https://www.unicef.org/reports/UNICEF-WHO-low-birthweight-estimates-2019
3. Girotra S, Mohan N, Malik M, Roy S, Basu S. Prevalence and determinants of low birth weight in India: findings from a nationally representative cross-sectional survey (2019–21). Cureus. 2023 Mar;15(3):e36717. doi: 10.7759/cureus.36717. PMID: 37123748; PMCID: PMC10129903.
4. Curfman AL, Hackell JM, Herendeen NE, Alexander JJ, Marcin JP, Moskowitz WB, Bodnar CEF, Simon HK, McSwain SD; Section on Telehealth Care, Committee on Practice and Ambulatory Medicine, Committee on Pediatric Workforce. Telehealth: Improving Access to and Quality of Pediatric Health Care. Pediatrics. 2021 Sep;148(3):e2021053129. doi: 10.1542/peds.2021-053129. PMID: 34462339; PMCID: PMC9633975.
5. Yellowlees P, Shore J, Roberts L; American Telemedicine Association. Practice guidelines for videoconferencing-based telemental health - October 2009. Telemed J E Health. 2010 Dec;16(10):1074-89. doi: 10.1089/tmj.2010.0148. PMID: 21186991.
6. Byrne D. A worked example of Braun and Clarke's approach to reflexive thematic analysis. Qual Quant. 2022 Jun 1;56(3):1391–412 (2022). doi: 10.1007/s11135-021-01182-y
7. Cox V, Sharma P, Verma GS, Gill N, Diamond-Smith NG, Duggal M, Kumar V, Bagga R, Kaur J, Singh P, El Ayadi AM. User acceptability and perceived impact of a mobile interactive education and support group intervention to improve postnatal health care in northern India: a qualitative study. BMC Med Inform Decis Mak 25, 93 (2025). doi: 10.1186/s12911-025-02935-7.
8. Haffner DN, Bauer Huang SL. Using Telemedicine to Overcome Barriers to Neurodevelopmental Care from the Neonatal Intensive Care Unit to School Entry. Clin Perinatol. 2023 Mar;50(1):253-268. doi: 10.1016/j.clp.2022.10.006. PMID: 36868709.
9. Kruse CS, Krowski N, Rodriguez B, Tran L, Vela J, Brooks M. Telehealth and patient satisfaction: a systematic review and narrative analysis. BMJ Open. 2017 Aug 3;7(8):e016242. doi: 10.1136/bmjopen-2017-016242. PMID: 28775188; PMCID: PMC5629741.
10. Mehl G, Labrique A. Prioritizing integrated mHealth strategies for universal health coverage. Science. 2014 Sep 12;345(6202):1284-7. doi: 10.1126/science.1258926. PMID: 25214614.
11. Wootton R. Telemedicine support for the developing world. J Telemed Telecare. 2008;14(3):109-14. doi: 10.1258/jtt.2008.003001. PMID: 18430271.