

Original Research Article

Barriers to practice of critical newborn care behaviours: findings from a qualitative assessment in rural Madhya Pradesh, India

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ABSTRACT

Background: In India, the state of Madhya Pradesh has one of the highest infant mortality rates (IMR) as compared to the national average. About two out of every three infant deaths in Madhya Pradesh, are of neonates. Given the high neonatal mortality rate in the state, this study aimed to explore the perceptions, practices, barriers and enablers related to critical newborn care behaviors, such as cord-care, thermal care, skin-to-skin care, and early initiation of breastfeeding, in the first 24 hours of life.

Methods: In-depth interviews and focus group discussions were conducted with 53 respondents including mothers and fathers of the newborn, mothers-in-law, elected community and tribal leaders, local NGO representatives, and frontline health workers, in two districts of Madhya Pradesh.

Results: Few mothers knew about the benefits of cord care, thermal care and early initiation of breastfeeding. Fathers lacked knowledge and perceived newborn care as the mother's responsibility. Skin-to-skin care was rarely practiced; and was perceived across respondent groups as necessary only for weak infants. Older women, influential in decision making in the household, held misconceptions about thermal care and breastfeeding practices. Traditions and social norms emerged as major barriers while institutional delivery served as an enabling factor for the practice of correct newborn-care behaviors.

Conclusions: To increase adoption of critical newborn behaviours, health care providers will have to move beyond mere interpersonal communication with individual mothers at facility or household levels towards a community and societal approach. A strategic behaviour change communication program that addresses deep-rooted traditional and social norms is required to help the state reduce infant deaths.

Keywords: Barriers, India, Madhya Pradesh, Newborn-care, Practices

INTRODUCTION

The first 28 days of life are the most critical for a child's survival; half of all child deaths within this neonatal period occur within the first 24 hours of life.^{1,2} India has the highest number of neonatal deaths (22% or 5,49,000 of 2.5 million) in the world.³ With 47 infant deaths and 36 neonatal deaths per 1000 live births, the central Indian

state of Madhya Pradesh has the highest infant and neonatal mortality burden in the country, as well as the highest neonatal mortality rate in the world.⁴⁻⁶ Of every 10 infant deaths in Madhya Pradesh, seven are neonates.⁶

Neonatal mortality is associated with poor quality of care around childbirth and conditions including preterm and intrapartum-related complications, sepsis, pneumonia,

tetanus, diarrhoea, that are preventable with cost-effective interventions.³ The World Health Organization (WHO) recommends four essential newborn care practices of cord care, thermal care, skin-to-skin care, and early initiation of breastfeeding to reduce neonatal morbidity and mortality.^{2,7} WHO recommends clamping of the umbilical cord not earlier than one minute after birth, with a sterile instrument, and in case of home deliveries, using the ties and a new razor blade from a disposable delivery kit to tie and cut the cord.⁸ Correct thermal care includes wiping the baby clean but not bathing the baby until after 24 hours after birth or at least six hours in case a delay is not possible due to cultural reasons. Newborns without complications should be kept in skin-to-skin contact with their mothers during the first hour after birth to prevent hypothermia and promote breastfeeding. Breastfeeding should be when the baby shows signs of readiness, within the first hour after birth. Several studies have found these four essential newborn care behaviours to be protective factors against neonatal morbidity and mortality.⁹⁻¹⁵

One in five child births in Madhya Pradesh took place at home, and in 59% of all home deliveries the recommended disposable delivery kit was not used. Furthermore, in 6% of home deliveries, the practice of cutting the newborn child's umbilical cord with a new blade was not carried out, and in 17% of home deliveries, neonates were given a bath within 24 hours of birth. Two thirds (65%) of all newborn were not breastfed within an hour of birth, depriving them of the essential nutrients, antibodies and skin-to-skin contact with their mother that protect them from disease and death, and 42% did not receive exclusive breastfeeding for the recommended 6 months.¹⁶ This study aimed to explore the barriers and enablers to adoption, within the first 24 hours of a newborn's life, of the four critical newborn practices—cord care, thermal care, skin-to-skin contact and early initiation of breastfeeding— in rural communities in Madhya Pradesh.

METHODS

This study used a qualitative approach to explore barriers and enablers to adoption, within the first 24 hours of a newborn's life, of four critical newborn practices. In-depth interviews (IDIs) and focus group discussions were conducted with various stakeholders in rural communities in Madhya Pradesh. While neonatal mortality rates are high in Madhya Pradesh, especially in rural areas, very little is known about people's beliefs. Therefore, qualitative inquiry informed by principles of constructivism seemed an appropriate approach because it is based on an underlying belief that there are multiple perceptions of reality and that individuals construct understandings of reality in interaction with others.

Study setting

In Madhya Pradesh, government-funded primary health centers are the first point of care for essential

reproductive, maternal and child health services, and related referral services. Each primary health center consists of a medical doctor, an auxiliary nurse midwife (ANM), a multipurpose worker and a voluntary frontline health worker called ASHA (accredited social health activist) who acts as a link between the village and the primary health center.¹⁷

This study was conducted in purposively selected rural communities in two districts of Shahdol and Shivpuri in Madhya Pradesh. Shahdol reported a high infant mortality rate (IMR) of 77 and neonatal mortality rate (NMR) of 49 per 1000 live births; similarly, Shivpuri recorded an IMR and NMR of 71 and 45.^{18,19} Shahdol and Shivpuri also reported a high number of home deliveries (30% and 13% respectively), and more than half of the newborns in both the districts were not breastfed within an hour of birth.¹⁸

Sampling

In-depth interviews (IDIs) and focus group discussions (FGDs) were conducted with purposively selected community members including mothers and fathers of children less than five years of age, mothers-in-law, tribal leaders, frontline health workers, and representatives of local non-governmental organisations (NGO) working on maternal and child health. A total of 53 respondents were included in this study. Seven FGDs, with six respondents in each group, lasting approximately 90 minutes each, were conducted with mothers, fathers, and frontline health workers. District-level officers from the Department of Health and Family Welfare connected the research team to government frontline health workers including ANMs, ASHA and Anganwadi workers. Trained researchers separately approached potential respondents including mothers and fathers, mothers-in-law, local leaders and NGO staff, in purposively selected rural communities in the two districts. Potential respondents who voluntarily agreed to participate were included in the study.

Data collection

Open-ended IDIs, lasting 45 minutes on average, were conducted with 11 respondents including mothers-in-law, tribal leaders, and NGO representatives. Respondents were interviewed at the local government facility in case of FGD, and in their house for IDIs. Data was gathered by male and female researchers, trained in individual and group interviewing techniques, experienced in qualitative data collection, familiar with newborn health practices and issues in the state, and fluent in Hindi (official state language). The interview covered thematic areas of knowledge, practices, barriers and enablers, traditional and community beliefs and social customs around newborn care behaviours. All interviews were audio recorded with prior permission; the moderator also took handwritten notes. Data gathering took place from November 2014 to February 2015.

Data analysis

Audio tapes of all the interviews were transcribed in Hindi, translated into English and then matched to the handwritten notes. Thematic data analysis was done manually and independently by two investigators. Steps for thematic data analysis for all transcripts and moderator notes included (a) becoming well-acquainted with the data; (b) noting impressions and deriving categories; (c) reviewing and refining categories; (d) developing themes; and (e) reviewing previous steps to derive new themes, commonalities, patterns, and differences.²⁰ Themes were established by both frequency and importance. Individual findings were discussed and agreement on the interpretation was reached by all three authors.

Ethical considerations

District-level officers in the Department of Health and Family Welfare approved of the study. Researchers explained objectives of the study, confidentiality, and voluntary nature of participation to all respondents; obtained verbal consent for the study; and consent to audio-record the interview. Interviews and discussions took place in privacy, and to ensure confidentiality, all respondents were assigned identification numbers.

RESULTS

Sociodemographic information

Respondents were aged between 18 to 60 years, with half between 18 to 25 years. Most respondents were women, had education below 10th grade, were married and employed. The majority reported a monthly household income ranging from Rs. 1500 to Rs. 5000 (US\$22 to US\$75) (Table 1).

Perceptions

Cord care

All the mothers and fathers, and mothers-in-law were aware of the practice of cutting the umbilical cord with a new, sterilized blade and leaving the cord stump dry until it falls off. However, none of these respondents could explain the benefits of this practice or the harms of not following correct cord care. None of the women recalled being counselled about the benefits and harms of cord care practices or checking for infections and subsequent care-seeking, highlighting a gap in antenatal and postnatal care by frontline health workers and medical staff at the health facility.

“It (cutting cord with a clean blade and keeping it dry) is a routine practice. The cord was cut and clipped at the health facility, but no one told me to check the area. I don’t know if it is important.” (FGD with married women)

Table 1: Sociodemographic characteristics (n=53).

Characteristics	Number	%
Type of respondents		
Married female	12	23
Married male	11	22
Mothers-in-law	5	9
Local village council members	4	7
Village/tribal leader	5	9
Frontline health workers	12	23
NGO representatives	4	7
Gender		
Male	19	36
Female	34	64
Age (in years)		
18-25	21	40
26-35	16	30
36 and above	16	30
Education level		
No education	3	5
Below 10 th grade	25	48
Completed 10 th grade	7	13
Completed 12 th grade	9	17
Bachelor’s/Master’s degree	9	17
Marital status		
Married	52	98
Single/widowed/divorced	1	2
Number of children		
0	2	4
1	13	24
2	21	40
More than 2	17	32
Employment status		
Employed	43	81
Unemployed (housewife)	10	19
Monthly household income (in INR)		
<Rs. 1500	7	13
Rs. 1500-Rs. 5000	31	58
Rs. 5000-Rs. 10000	9	17
>Rs. 10000	6	12

Thermal care

While fathers were completely unaware of correct thermal care practices, most mothers spoke about wiping and wrapping the newborn in a clean cloth soon after birth, as they had seen this practice in the health facility. Although a few mothers thought it was beneficial; most respondents lacked complete information about delaying a bath until 24 hours after birth and the benefit of protecting the child from hypothermia. Few older women (mothers-in-law) believed that newborn children should be given a bath soon after birth to cleanse them of all impurities.

Skin-to-skin care

None of the mothers could recall being counselled about this practice and its benefits during antenatal care visits. Few mothers also thought that skin-to-skin care was a hospital-based practice that was not required at home. Fathers were unaware of this. The mothers-in-law thought it was strange to place the newborn on the mother's chest without bathing and cleaning it. Even frontline health workers lacked knowledge; many of them perceived that skin-to-skin care was only required in the case of weak or pre-term babies and in the cold months.

“Skin-to-skin care is only practiced in the case of weak infants. We do not generally advice mothers to follow this if their baby is healthy.” (FGD with frontline health workers)

“Skin to skin contact between the child and the mother is beneficial only during the months of winter and not during summer.” (IDI with a tribal leader)

Early initiation of breastfeeding

All mothers were aware that newborn should be fed colostrum soon after birth; they had been encouraged by nurses at the health facility. Mothers believed that colostrum protected the newborn from illness. Fathers were uncomfortable discussing this topic, citing it as a woman's issue. Local government and tribal leaders agreed that newborn children should be breastfed soon after birth as this first milk is nutritious. However, all the mothers-in-law said colostrum was dirty and harmful; it could get stuck in the child's throat; the newborn would not be able to digest the thick, oily colostrum.

“My mother told me that she had thrown away the colostrum as it is dirty.” (FGD with married women)

“The first milk is discarded, the mother's chest is cleaned, after which the mature milk is fed to the child. Colostrum is harmful as it is sticky and can get stuck in the child's throat, making it difficult to digest.” (IDI with mother-in-law)

Practices

Institutional births

All the mothers in this study had given birth in a health facility, and in all cases, the umbilical cord was clamped with a sterile instrument, the newborn was wiped clean and dry, and put to the mother's breast within an hour of birth. However, none of the women checked the cord stump for infections. Skin-to-skin care was only practiced in few cases. Newborn children were given a bath only after returning home from the health facility, two to three days after child birth.

“The mother and child usually stay in the hospital for 3 days after delivery, and they bathe the baby only when they return home.” (FGD with frontline health workers)

Skin-to-skin care was rarely practiced even in institutional deliveries, and it was not considered important or beneficial by frontline health workers. NGO representatives said there was lack of awareness about this beneficial practice across all stakeholders. Early breastfeeding within an hour of birth, however, was practiced by all women as they believed it to have benefits for their child, and was endorsed by healthcare providers.

Table 2: Knowledge and perceptions of four recommended newborn behaviours among three key stakeholders and counselling by frontline health workers.

Recommended newborn care behaviour	Stakeholders			
	Mothers	Fathers	Mothers-in-law	Frontline workers
Cord-care	Aware	Aware	Aware	Lack of antenatal counselling
Thermal care	Highly aware	Completely unaware	Unaware; misperception that bathing required immediately	Practiced at health care facility
Skin-to-skin care	Incomplete; perceived as part of hospital routine	Unaware	Unaware; misperception that baby is dirty	Misperception that required only for weak or low-birth weight babies
Early breastfeeding	Highly aware; encouraged by health providers	Uncomfortable discussing the topic; perceived as woman's issue	Unaware; misperception that colostrum can make baby sick	High level of counselling of mothers

“The doctor asked me to feed my child this first milk. They know what is good and bad for the child. So, it must be important.” (FGD with married women)

“It (colostrum) is beneficial for the child. Within half an hour’s time, I was asked to breastfeed. The child stays healthy and does not fall sick.” (FGD with married women)

Home births

While home births have been declining, they are still observed, particularly in tribal communities. Tribal leaders and NGO representatives pointed out that traditional practices of cutting the umbilical cord with hot instruments such as a sickle or sharp knives used to be common practice. Although, the rise of institutional deliveries and antenatal counselling by frontline health workers has led to use of new or sterilized blade. NGO representatives added that while sterilized blades were being used for cord-cutting in home deliveries, people are still unaware of the time of cord clamping and to check for infections.

“Cutting the (umbilical) cord with a hot sickle was a common practice back then, but this has reduced now. Earlier, there was also a belief that cows dung should be applied on the newborn’s cord stump for it to heal.” (IDI with a community leader)

“If the cord is cut before or after the recommended time, it can put the newborn’s health at risk, especially in the case of a home delivery without a trained birth attendant.” (IDI with a NGO representative)

Application of certain substances, including mustard, clove or mahua (herb) oil, ashes, and turmeric powder, on the stump after cutting the cord was found to be a common practice, especially in tribal households. This practice is believed to heal the area, help it dry faster and fall early.

“After the cord is cut with a new blade and tied using a thread, mahua (local medicinal herb) oil or coal is applied on cord stump which gives the child’s body warmth and helps the cord stump dry up quickly.” (IDI with a tribal leader)

Giving the newborn a bath on the same day of birth was found to be a common practice in home deliveries. Older women and tribal leaders held the belief that bathing newborn babies and mothers immediately was a cleansing process; it helped to keep the mother and child clean from any impurities. Home deliveries were found to delay initiation of breastfeeding as the traditional midwife first cuts the umbilical cord, cleans the mother and child, gives the mother and child a bath with warm water, and only then lets the mother breastfeed the child. NGO representatives shared that colostrum was discarded

before giving the mother a bath during home deliveries. In some cases, the new-born was not given breast milk for up to 2-3 days after delivery due to the belief that the mother is not able to produce milk for the first few days after giving birth. This belief also led to introduction of pre-lacteal feeds such as water, animal milk and honey.

“If the child is born at home, it is not given milk (colostrum) immediately. The child is breastfed only after 2 to 3 days. This is a practice we follow.” (IDI with mother-in-law)

Barriers

Individual level

Lack of clear information about correct cord, thermal and skin-to-skin care was observed among mothers. Barring early initiation of breastfeeding, most mothers were unaware of the benefits of other recommended newborn care behaviours and the harms of not following them. As a result, they had low risk perception about cord care practices such as keeping the area dry and checking for infections as well as delaying bathing after 24 hours of birth. Mothers said that while giving birth in a health facility ensures that recommended newborn behaviours are followed, not all pregnant women have the decision-making power to choose an institutional delivery.

“In many homes, it is the husband or the mother-in-law who decides where the woman will give birth. It is not in her hands.” (FGD with married women)

Family level

Fathers reported that they usually wait outside the woman’s room in the health facility while the older female members help the mother. While most fathers were aware that cutting the umbilical cord required a clean blade, none of them knew about thermal care practices and skin-to-skin care. Men also did not feel comfortable talking about breastfeeding. All male respondents expressed that newborn care practices fall under the domain of women; and men’s responsibility was limited to arranging transport for institutional delivery, medicines and food.

“Men don’t know about these things. And we have never even asked anyone about this (newborn care practices).” (FGD with married men)

Most of the mothers-in-laws interviewed, were insistent that newborns should be given a bath on the same day of birth or the day after or else the child would remain unclean. Mothers and NGO representatives shared that in many households, mothers-in-law often had a greater decision-making autonomy when it came to reproductive health of the young mother and newborn health.

“If the child is born at night, then it should be given a bath the next morning. If the child is not given a bath soon then how will it be clean?” (IDI with a mother-in-law)

Community level

Traditional practices in home deliveries, especially in tribal communities, such as applying oils and other natural substances on the cord stump, bathing the newborn soon after birth, delaying breastfeeding and introducing prelacteal feeds soon after birth are socially accepted and considered normative at childbirth, but they act as barriers in following the recommended critical newborn care behaviours. NGO representatives shared that despite all the work by healthcare workers, since older tribal leaders and family members still approve of and endorse these traditional practices, it becomes difficult for mothers to follow recommended newborn behaviours.

“If the child is born today then he or she will be given a bath within one to two hours of birth. This helps to clean the white layer off the newborn. After a bath, the child’s body is given a rub with a warm cloth smoked with carom seeds. This is a practice that we have been following for long.” (IDI with tribal leader)

Health facility level

Frontline health workers had inadequate knowledge about correct cord care and skin-to-skin care practices, and all thought that skin-to-skin care was meant for newborn children with complications. Frontline workers raised the need for updated information about newborn practices, and also wanted support to address deep-rooted traditional practices in certain communities.

Enablers

Institutional delivery

All the mothers in this study had given birth in a health facility. Government-sponsored financial incentives for institutional delivery, free transport to the facility, food, medicines, and care in case of complications were common reasons why women chose to give birth in a health facility. The government incentivizes institutional deliveries for the frontline health workers as well, who encouraged and sometimes accompanied pregnant mothers to the facility. Furthermore, health workers tend to emphasize and advice early and exclusive breastfeeding.

“We got paid for having an institutional delivery. This helps. We also got food, a good bed, and injections to reduce pain. I was advised to breastfeed my child immediately.” (FGD with mothers)

DISCUSSION

This qualitative study, conducted in rural communities of Madhya Pradesh, provides a rich understanding of critical newborn behaviours in order to help reduce neonatal deaths in the state. The literature on newborn health in Madhya Pradesh tracks mortality trends; uptake of government health services and schemes; very few studies explore high-impact and low-cost newborn care practices.²¹⁻²⁸

This study found that many respondents did not know what behaviours are critical for newborn health; their significance and benefits; their sequence, and how they are to be practiced. Mothers were more likely to know these practices; by contrast, fathers were mostly unaware and felt that newborn care was the woman’s domain. Older women, influential in decision making in the household, held misconceptions about thermal care and breastfeeding practices. Knowledge among mothers about benefits of early initiation of breastfeeding and feeding colostrum to newborn was enabled by institutional deliveries. However, skin-to-skin care was rarely practised and was perceived by most respondents, including frontline health workers, as necessary only for weak infants. Institutional delivery enables the practice of a couple of newborn care behaviours, but more work remains to be done in training frontline workers.

Bathing newborns immediately or within half an hour of delivery can cause hypothermia and contribute to neonatal mortality.²⁹⁻³² Bathing newborn soon after birth, particularly in home deliveries among tribal communities, impedes correct thermal care. This traditional practice is common in rural households in India; it will be important to address this deep-rooted norm. Interestingly, even frontline health workers were unaware about skin-to-skin care indicating the need for capacity building.^{33,34} Despite the benefits of early breastfeeding, misconceptions held by older females, traditional beliefs deterred mothers from feeding colostrum to the newborn.³⁵ With respect to barriers to correct cord-care, studies with tribal populations in Madhya Pradesh have reported similar high-risk practices of using unsterilized objects such as arrows, sickle, bamboo strip or knives to cut the cord, and applying turmeric powder, oil and ash on the cord stump to allow it to heal.²⁷

Fathers claimed ignorance about these behaviours because they felt newborn care was not their domain. Men are important decision-makers in the household issues; they have to be educated about newborn care practices, so that they can support women to practice them. Older women, equally influential during child birth, also held misconceptions about thermal care and breastfeeding practices. Although institutional deliveries enabled a couple of the correct newborn care behaviours, health staff need to use these opportunities to inform and influence women and their families, and continuously improve the quality of maternal and child health care.

Limitations

The limitations of this study are similar to other qualitative studies such as small sample size and convenient manner of selection of respondents. There could be differences between the respondents recruited for this study with other respondents in the rest of Madhya Pradesh; these respondents could be living in certain types of communities or social groups, therefore, it will not be possible to generalize from this study. The findings are a snapshot of some of the practices and perceptions that were reported to our interviewers. It has to be acknowledged that it is not possible to gain a full understanding of perceptions and practices about newborn behaviours given the limited scope and duration of this study.

CONCLUSION

Findings from this study point to: (i) lack of clarity on the critical newborn behaviours and (ii) traditions and norms as barriers to practice. All of these behaviours have to be practiced within 24 hours of the child's birth; they can become confusing for the mother and family to remember and follow. Particularly with lack of clear information and when these behaviours often require a sharp break from tradition. An evidence-informed strategic behaviour change communication (BCC) program has to clearly state the specific behaviours, articulate the benefits of adopting them; and address social norms and traditions around them. Addressing community norms will require more than interpersonal communication of mothers by frontline health workers. The BCC program will have to be multileveled, address barriers and enablers at the individual, family, community, and health facility-level. The BCC program will have to address the lack of decision-making power with the women, by involving husbands and older female members into the dialogue. Community norms can be addressed by involving influential local leaders and role models to endorse recommended newborn care behaviours. The program must also ensure capacity building of frontline health workers, including knowledge of updated guidelines as well as communication skills.

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