

# Traditional Newborn Care Practices in a Tribal Community of Tamilnadu, South India: A Mixed Methods Study

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## Abstract

**Background and Objectives:** Traditional newborn rearing practices play a vital role in neonatal morbidity and mortality. In this context, a concurrent mixed method study was conducted to identify the traditional practices in newborn care in tribal villages of Sittilingi Panchayat of Tamil Nadu, South India. **Methods:** The quantitative data were collected by a community-based cross-sectional study among 59 mothers of infants. Qualitative component included two focus group discussions (FGD) each with seven mothers and one traditional dai. **Results:** About 38.9% of newborns received colostrum, and 61.1% had prelacteal feeds. Majority (84.7%) of newborns had received appropriate thermal care. More than two-thirds (71.2%) of newborns were given bath before umbilical cord dropped off. During bathing, 83.1% were massaged and 67.8% had their vernix removed. Practice of blowing into nostrils (45.7%), substance application on the cord (94.9%), tepid sponging during fever (28.8%), sweet flag application over umbilicus for colic (8.5%), herbal medications during diarrhea (40.6%) and cold (25.4%), exposure to sunlight (67.8%) during jaundice, oil instillation in nostrils (76.3%), and ears (32.2%) to protect against infection were reported. Majority reported approaching traditional health practitioners during illness. Similar practices were reported in the FGDs. The beliefs related to these practices were explored. **Conclusion:** Both beneficial and harmful practices in newborn care were identified. Primary health care workers like ASHAs could be trained to recognize traditional newborn practices in their field areas to deliver appropriate behavior change communication to preserve safe practices and avoid harmful practices to improve newborn health.

**Keywords:** Breast feeding, colostrum, cultural practices, health care seeking behavior, tribes, umbilical cord

## INTRODUCTION

Reduction of infant mortality is a foremost development goal of Government of India. According to annual report 2020–2021, the infant mortality rate is 32/1000 live births.<sup>[1]</sup> Two-thirds of infant deaths are reported to occur in neonatal period. As an impact of implementation of programs and strategies like Janani Suraksha Yojana, Navjat Shishu Suraksha Karyakram, Facility and Home Based Newborn Care, the neonatal mortality has declined from 29/1000 in 2012 to 23/1000 live births (SRS2018).<sup>[2]</sup> However, the rate of decline has been observed to be slower.<sup>[3]</sup> One of the key factors for this slow declining trend is the traditional newborn rearing practices of the communities.<sup>[4,5]</sup> Traditional beliefs and practices in Indian communities have greater influence on newborn health than government policies. They interfere with the efforts of healthcare providers in preventing neonatal morbidity and mortality.<sup>[5]</sup> These practices differ from state to state, culture

to culture, religion to religion, place to place and are more difficult to change.<sup>[6]</sup>

The first 28 days of a newborn's life is a crucial window of opportunity for prevention of newborn complications, which can otherwise prove fatal. In institutional deliveries, postnatal mothers receive key messages on exclusive breastfeeding and appropriate newborn care.<sup>[7,8]</sup> A healthy newborn is discharged in the first week of life. Thus, a newborn receives essential newborn care services during the hospital stay. But later, when the newborn is at home, traditional practices influence the care significantly. There is a risk for more than 50% of infant deaths

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to occur during the second to fourth week of life, and the risk is high in tribal areas.<sup>[9,10]</sup>

Through home-based newborn care, successful healthy behavior change in newborn care can be achieved, provided the health care workers equip themselves with a detailed understanding of key traditional practices and beliefs influencing such behaviors.<sup>[11,12]</sup> Through a mixed methods approach, this study was conducted to identify beneficial and harmful practices on newborn care in a selected tribal panchayat in Tamil Nadu in India.

## METHODOLOGY

The study involved a concurrent quantitative and qualitative data collection process.<sup>[13]</sup> In the quantitative part, a cross-sectional study design was applied. In the qualitative component, focus group discussions (FGD) were conducted. The findings of both approaches were combined to have a holistic information on the newborn care practices in the study areas. The study was conducted in 2017 after obtaining institutional ethical clearance.

The tribal areas selected for the study were 11 villages located in Sittilingi Panchayat, Dharmapuri district of Tamil Nadu. The panchayat covers a population of 6303 (2011 Census). The people are called Malayalees or Malaivasis (hill people). This area has limited public transport facilities. A government primary health center is located about 10 to 20 kms from the study areas. The nearest town is 40 to 50 kms away from study areas.

A private charity organization runs a secondary-level care hospital with special emphasis on MCH care. The list of mothers delivered in the last one year in the hospital was obtained. Mothers with infants who were residing in the study area for more than one year were included. From the total list of 98 mothers, based on the eligibility criteria and availability, 73 mothers were identified. For the quantitative component, 59 mothers were selected by purposive sampling technique. After obtaining informed consent, a semi-structured interview tool was administered. The tool included questions on traditional practices and beliefs related to breast feeding, umbilical cord care, thermal care, skin care, management of jaundice, cold, fever, care of eyes and ears, infantile colic, diarrhea, and prevention of infection. The tool was first developed in English and later translated into Tamil (local language). The Tamil tool was back translated to English, and congruence was checked for validity. Content validity was obtained from 2 specialists (community medicine and community health nursing). The data were entered in Excel and analyzed using SPSS version 23 (SPSS South Asia PVT. Ltd., Bangalore, Karnataka, India).

For FGDs, 14 mothers who were not part of the quantitative study were included. Two FGDs, each with 7 mothers and one traditional dai, were conducted. The FGDs were conducted in local language with a facilitator guide and with audio recording at a place and time convenient to the

participants. The average duration of each discussion lasted for 45 minutes. At the end of the FGD, the summary of the discussion was read back to the participants to ensure participant validation. The content of the discussions was transcribed verbatim and translated to English. Analysis was done using theme analysis method. Meaningful information was coded and categorized into themes. The main themes analyzed were breast feeding, colostrum, prelacteal feeds, cord care, thermal protection, bathing, and other common traditional practices.

## RESULTS

The mean age of mothers in the quantitative survey was  $25.15 \pm 3.4$  years. Nineteen mothers (32.2%) were illiterate, and one-third (33.9%) had studied up to high school. Majority were multiparous (71.2%). Fourteen (23.7%) deliveries had occurred at home. Among these, eight deliveries were conducted by mother in laws, four by dais, and two deliveries were unsupervised. Unsterile blades or knives were used to cut the cord.

### Traditional beliefs and practices

Beliefs and practices related to colostrum, prelacteal feed, substance application over cord, thermal care and bathing practices are shown in Table 1.

Twenty-three mothers (38.9%) had fed colostrum to their newborns. Prelacteal feeds were given by 36 mothers (61.1%) for a period of one to three days. Reasons to avoid colostrum were that it is a stagnant impure milk, not good for health, cannot be digested by the newborn, and forms hard stool. In the FGDs, similar reasons were mentioned for avoiding colostrum. One participant said *“Pure milk is not secreted during the first few days. our family practice is that we give honey or sugar water for five days after birth.”* Another response was, *“Colostrums are hard for the baby to digest, so I gave prelacteal feeds.”*

Majority (94.9%) mothers had applied substance over the umbilical cord stump. Sweet flag, coconut oil, and turmeric powder were common applications. About 84.7% had buried the umbilical stump. A few cord stumps (5.1%) were given to infertile women to swallow. In the FGDs, the participants said that applying sweet flag over the cord is a family practice. Majority mentioned that they buried the umbilical cord to prevent animals from eating it; otherwise, the newborn will become sick. It is also believed that infertile women may become fertile after consumption of the cord.

Majority (84.7%) of the mothers practiced “rooming in.” Old cotton clothes were used by 86.4% mothers to cover the newborns. In the FGDs, the reasons mentioned for keeping the baby covered were that the baby will be warm and sleep well. It also prevents the ill effects of evil spirits. New dress will be worn only after performing special pooja. Swaddling or mummifying was not practiced, as the mothers felt that it would restrict the movement and growth of the baby.

About 71.2% of newborns were given bath within 2 days after birth. Majority (83.1%) of newborns were massaged during bathing. Blowing into nostrils was carried out in 45.7% of newborns. Vernix was removed for 67.8% of newborns. In the FGDs, the participants mentioned that either neem leaves, salt, herbal medicines or stones are soaked in the water before bathing. Regarding massage, one of the respondents said “During delivery, the baby comes out with lot of pressure. It will have body ache. Massaging will decrease the pain and baby will sleep for long period.” Other reasons for massaging were to soften the skin and make it shiny. Coconut oil, castor oil, and gingelly oil were mostly used for massaging.

### Traditional practices prevailing in the study areas during illness

For skin infection, jaundice, fever, colic abdomen, diarrhea, constipation, and common cold, the responses of the participants are shown in Table 2. Through FGDs, the following additional information was obtained.

- Colic abdomen: Apart from the responses obtained in the quantitative study, other less common measures reported were giving dhal or cumin water and castor oil massage over the stomach.

**Table 1: Traditional practices in essential newborn care adopted by the mothers**

Traditional practices	n	%
Feeding (n=59)		
Colostrum	23	38.9
Prelacteals	36	61.1
Prelacteals (n=36)*		
Sugar water	28	77.8
Honey	6	16.8
Butter	3	8.3
Others (goat milk, sugarcane juice)	2	5.5
Umbilical cord care (n=59)		
Substance application	56	94.9
Vasambu (Sweet flag)	27	48.2
Coconut oil	15	26.8
Turmeric powder	9	16.1
Others (boric powder, antiseptic)	5	8.9
Thermal care (n=59)		
Rooming in	50	84.7
Old cotton clothes	51	86.4
Bathing (n=59)		
Within 24 h	14	23.7
Second day	28	47.5
Bathed after umbilical cord fell	17	28.8
Practices during bathing (n=59)		
Massage	49	83.1
Removal of vernix	40	67.8
Blowing into nostrils	27	45.7
Substances Soaked* (n=22)	22	37.3
Neem leaves	13	59.1
Stones	4	18.2
Salt	3	13.6
Silver	2	9.1

\*Multiple responses

- Diarrhea: Almost all said that food for the mother is restricted. They drink less water and avoid milk, milk products, and dhal.

Most of the mothers mentioned seeking for the traditional healer as their first contact for the above conditions.

### Protection of baby from evil eye/spirits

One-fourth (25.4%) of the mothers and newborns were not allowed to leave the house in the first month after birth. A few (16.9%) mothers had applied kajal around the eyes. The newborns' clothes were not dried outside the house (25.4%) [Table 3]. In the FGDs, the participants said “We were kept separately at home.” “Cats and dogs are not allowed to come inside the house as they will lick the newborn and will cause infection.” “We will be allowed to carry on routine work after a month.” Killing animals, exposure to incense powder smoke, and sprinkling of holy water around the house were practiced to protect the newborns against evil spirits. Tiredness, poor feeding, ill health, and growth being affected were mentioned as the effects of evil spirits on the newborn.

**Table 2: Perceived traditional practices in the study areas during illness (n=59)**

Practices during illness of newborn	n	%
Skin Infection*		
Traditional healer	25	42.4
Keep the skin dry	21	35.6
Turmeric paste	19	32.2
Fried sand	8	13.6
Breast milk	7	11.8
Jaundice		
Exposure to sunlight	40	67.8
Bathing with water mixed with papaya juice	12	20.4
Cover baby with yellow cloth	7	11.8
Fever		
Traditional healer	22	37.3
Place the baby in a ventilated place	20	33.9
Wipe with cold water	17	28.8
Colic abdomen		
Gripe water	51	86.4
Sweet flag application over abdomen	5	8.5
Herbal syrup	3	5.1
Diarrhea*		
Herbal medicines	24	40.6
Rice kanji or lemon juice	6	10.2
Continue breast feeding	49	83.1
Constipation		
Vasambu (Sweet flag)	22	37.2
Castor oil	19	32.2
Tobacco stick	9	15.3
Others (water, more breast milk )	9	15.3
Common Cold		
Only breast milk	17	28.8
Herbal water	15	25.4
Tulsi water	12	20.2
Vasambu (Sweet flag)	11	18.6

\*Multiple responses

**Table 3: Preventive practices against evil eye and Illness (n=59)**

Traditional practices	n	%
Prevention against evil eye*		
Tie blue bead chain or garlic thread around the neck of newborns	22	37.3
Mother and baby were not allowed to come out of the house for a month	15	25.4
Avoid drying the baby's clothes outside the house	15	25.4
Keep broom, charcoal, chilly and iron at the door step of the house	13	22.1
Give bath in boiled water soaked in neem leaves	11	18.6
Keep neem leaves and religious books near to the newborn	10	16.9
Application of kajal in the eyes	10	16.9
Prevention against Illness*		
Oil instillation in the nostrils	45	76.3
Oil instillation in ears	19	32.2

\*Multiple responses

To prevent infection, oil instillation into nostrils (76.3%) or ears (32.2%) were reported by the mothers. Other reasons were to remove the dirt from ears, for proper opening of nostrils to prevent cold and reduce heat.

## DISCUSSION

In our study, all the mothers had received antenatal care with majority utilizing either the government primary health center or the private hospital services. Despite this, there were 14 home deliveries. Inaccessibility to health facility on the day of labor pains was quoted as the main reason. Home deliveries are common in tribal areas. As per NFHS4 report, 21% of women had delivered at home, majority of them being from the poorest and tribal households and often from difficult to access areas.<sup>[7]</sup> Rayagada and Nabarangpur tribal districts of Odisha had reported more home deliveries compared to institutional deliveries.<sup>[11]</sup> Sachdev in her study among nomad tribes in Rajasthan reported 63% of deliveries to have occurred at home.<sup>[14]</sup> Apart from inaccessibility, factors like fear of loss of wages, hospital expenses, and preference for traditional birth attendants prevent a tribal mother from utilizing the formal health system for delivery care.<sup>[11,15]</sup> Home deliveries have the risk of practice of unhygienic care during delivery. In our study, use of unsterile instruments to cut the cord was reported. Similar finding was reported in home deliveries among the above mentioned tribes in Odisha and Rajasthan.<sup>[11,14]</sup>

Harmful practices like prelacteal feeding, discarding colostrum, denial of breast feeding for three days were identified in the study. Beliefs reported by the mothers such as prelacteal feeds “cleans digestive system” and “colostrum is harmful” prevail in many communities. A study among 150 tribal mothers in Paroja tribal community at Koraput District, Odisha reported that 61% of babies had received prelacteals.<sup>[16]</sup> In a study among 153 tribes in Khardi, Thane, 23.5% mothers had given prelacteal feeds and 15.2% had discarded colostrum.<sup>[17]</sup> In the NFHS 4 survey, prelacteal feeding was observed to be

practiced in 21% of newborns. Mothers traditionally accept that a baby needs to be given prelacteal feeds such as sugar water and honey instead of colostrum.<sup>[18]</sup> In the present study, sugar water was more commonly used than honey and other items. A newborn fed with prelacteal feed is believed to take care of the person who gave the feed.<sup>[19]</sup> Unhygienic methods of prelacteal feeding and the quality of the feed can predispose the newborns to infections. Such practices have to be identified in a community to educate mothers and other caregivers on appropriate breast feeding practices.<sup>[16,19,20]</sup>

Newborn babies are vulnerable to change in temperature and should be protected from exposure to cold. In the present study, “rooming in” practice was reported by many mothers. Majority of the newborns were kept covered using old cotton clothes. Among the Bhil tribal community of Gujarat, skin-to-skin care is not a common practice.<sup>[21]</sup> A qualitative study (as cited by Begum<sup>[22]</sup>) conducted among 30 tribal women from two tribal villages at Ahmednagar reported that the newborns used to be wrapped with cotton clothes. Both the newborn and mother were made to lie down near the place where firewood was burnt to maintain temperature.

The beneficial practice of massaging during bathing was reported by mothers in our study. Similar practice was noted among tribal mothers in Ahmednagar where oil massage used to be given to the baby twice a day.<sup>[22]</sup>

Oil massage of newborn is a common practice in Asian region.<sup>[23,24]</sup> It is believed to help in the physical development of the baby. In our study, nearly one-fourth of newborns were given bath on the day of birth. Among the Sakwar tribes in Maharashtra, a similar practice was reported.<sup>[25]</sup> Among the Bhil tribes of Gujarat, delayed bathing until 7 days is a common practice.<sup>[21]</sup> Vernix removal was reported by 2/3<sup>rd</sup> mothers. Vernix is believed to be the remains of food stuff eaten by the mother during delivery. Concerns about the baby looking dirty with vernix motivate the caregivers for its removal while bathing.

Substance application on the umbilical cord stump was a common practice in the study areas. A substance is applied to prevent early drying of cord and entry of air into the stomach.<sup>[22]</sup> This practice was prevalent in other tribe communities. Application of mustard oil and turmeric powder on the cord and removal of vernix while bathing were reported among the tribes in Odisha.<sup>[11]</sup> The tribes in Karjat block, Rajgad, practice rubbing the skin for cleaning of vernix and application of bidi ash or kumkum over the cord stump.<sup>[22]</sup>

Beneficial practices like keeping the newborn in well-ventilated place, wiping with cold water during fever, exposure to sunlight during jaundice, application of turmeric paste over skin infection, and continuing breastfeeding during diarrhea were reported in the present study. Harmful practices like blowing into the nostrils, oil instillation of the eyes, nose, and ears were reported to prevent infection. Such practices are found to be prevalent in other communities.<sup>[26,27]</sup>

The practice of burying umbilical cord stump prevails in many communities.<sup>[22]</sup> Customs like application of kajal around eyes, oil, or turmeric on the anterior fontanelle, applying black soot on the cheeks, exposure to incense smoke, bathing in water ornamented with gold objects were reported in other studies.<sup>[28-31]</sup> These practices were to ensure safety against the effect of witchcraft and any harm to the newborn.

Herbal remedies are commonly used for digestion.<sup>[28,29]</sup> Most of the mothers in our study had either used home remedies or approached first their traditional healers during their newborn illness. Sweet flag was found to be commonly used for colic abdomen, constipation, common cold. However, mixed opinion on the beneficial and harmful effect exists in the literature regarding its use.<sup>[6,32,33]</sup> Traditional healers are preferred because of easy availability, poor access to health facility, and financial barriers.<sup>[23,34,35]</sup> At times, such traditional and household-level constraints cause delay in utilization of appropriate medical care thereby increasing the risk of neonatal mortality.

To get away from the effects of evil spirits, routine life for the mother starts after a month in the study villages. Similar observations were reported among the Vikramgad, Dharni, and Chikhaldara tribes of Maharashtra.<sup>[22,31]</sup> Such cultural practices seem to exist in communities abroad also. In their qualitative study in Ethiopia, Warren *et al.*<sup>[34]</sup> reported similar practices. In Turkey, the postnatal mothers and babies were not allowed to go out for 40 days to save from influence of evil spirits.<sup>[36]</sup> We feel that even though beliefs/practices related to evil spirits exist in many communities, the reasons behind such beliefs cannot be scientifically proved. Nevertheless, in situations when these practices seem to be detrimental to the health of newborns, possibilities of amicable solutions have to be explored by field level health care workers.

The limitation of our study is that the newborn care practices were not observed but only verbal information was obtained. The findings of our study cannot be generalized to all tribal communities in India as each tribe has its own specific culture.

To conclude, beneficial, harmful, and uncertain newborn care practices were observed in the study areas. The findings of the study were shared with the community health unit of the private charity health center. The staff were advised to sensitize their field workers on these beliefs and practices and to promote existing beneficial practices.

It would be a difficult task to change the harmful practices in any community immediately. Primary health care workers like ASHAs could be trained to recognize the existing local cultural beliefs and practices and to deliver appropriate behavior change communication strategies to preserve safe practices and avoid harmful practice. To enhance a satisfactory neonatal outcome, home-based newborn care could incorporate evidence-based culturally congruent care to achieve the sustainable development goals related to newborn health.

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## Declaration of Participants consent

The authors certify that they have obtained all appropriate Participants consent forms. In the form, the Participant(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The Participants understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

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