

Danger signs of neonatal illnesses: perceptions of caregivers and health workers in northern India

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Objective To assess household practices that can affect neonatal health, from the perspective of caregivers and health workers; to identify signs in neonates leading either to recognition of illness or health-care seeking; and to ascertain the proportion of caregivers who recognize the individual items of the integrated management of neonatal and childhood illnesses (IMNCI) programme.

Methods The study was carried out in a rural community in Sarojinagar Block, Uttar Pradesh, India, using qualitative and quantitative research designs. Study participants were mothers, grandmothers, grandfathers, fathers or "nannies" (other female relatives) caring for infants younger than 6 months of age and recognized health-care providers serving the area. Focus group discussions ($n=7$), key informant interviews ($n=35$) and structured interviews ($n=210$) were conducted with these participants.

Findings Many household practices were observed which could adversely affect maternal and neonatal health. Among 200 caregivers, 70.5% reported home deliveries conducted by local untrained nurses or relatives, and most mothers initiated breastfeeding only on day 3. More than half of the caregivers recognized fever, irritability, weakness, abdominal distension/vomiting, slow breathing and diarrhoea as danger signs in neonates. Seventy-nine (39.5%) of the caregivers had seen a sick neonate in the family in the past 2 years, with 30.38% in whom illness manifested as continuous crying. Health care was sought for 46 (23%) neonates. Traditional medicines were used for treatment of bulging fontanelle, chest in-drawing and rapid breathing.

Conclusion Because there is no universal recognition of danger signs in neonates, and potentially harmful antenatal and birthing practices are followed, there is a need to give priority to implementing IMNCI, and possible incorporation of continuous crying as an additional danger sign.

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Introduction

Globally 10 million children die annually before their fifth birthday, most of them in the neonatal period.¹ More than 98% of these deaths occur in developing countries. Almost half of the deaths in under-five-year-olds occur in infancy. Of the infant deaths, about two-thirds occur in the neonatal period. It has also been noted that one-third of all neonatal deaths occur on the first day of life, almost half within 3 days and nearly three-quarters within the first week of life.² In developing countries, about 34 of every 1000 live births result in neonatal death.¹

In India the neonatal mortality rate (NMR) dropped significantly from 69 per 1000 live births in 1980 to 53 per 1000 live births in 1990.² In recent years, however, the NMR has remained almost static decreasing only from 48 to 44 per 1000 live births from 1995 to 2000. A similar situation has been reported from other developing countries.²

The primary causes of neonatal death are sepsis (52%) (which includes pneumonia, meningitis, neonatal tetanus and diarrhoea), birth asphyxia (20%), prematurity (15%) and others (13%).² Lack of specificity of the clinical manifestations of various neonatal morbidities has been noted, resulting in difficulty in making a definitive diagnosis,³ delay in seeking care and resultant high mortality.⁴ However, the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) approach has attempted to provide a standard case definition of various neonatal morbidities, for example neonatal sepsis, jaundice and pneumonia, based on presence of certain clinical signs.⁵ For effective implementation of the IMNCI strategy it is necessary for the caregivers and health-care providers to recognize danger signs in a sick neonate and thereafter seek the appropriate level of health care, which in turn would reduce mortality.⁶ This has been the basic conceptual framework for improved neonatal care in developing countries.⁷

The present study was conducted to: assess the household practices that can affect neonatal health, from the perspective of the caregivers and health workers; identify signs in neonates leading either to recognition of illness or health-care seeking — the "danger signs"; and to ascertain the proportion of caregivers who recognize the individual items of the IMNCI module.

Methods

Study setting and study location

This work was done from May to November 2005 in Sarojinagar, a Block in the Lucknow district of Uttar Pradesh, northern India, with a population of about 2 million — 80% of which is rural — spread over 190 villages. The government has set up one community health centre and four primary health centres in the area. Here curative services are primarily provided by doctors, while preventive services, such as immunization and antenatal care, are provided

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by auxiliary nurse midwives (ANMs) in the community. In addition, there are private and traditional health-care providers, crudely estimated at one per village. At the time of this study, IMNCI had not been introduced in this area and there were no special neonatal health-care providers.

Study design

A triangulated design, combining both quantitative and qualitative methods was used in this study. Qualitative methods, such as focus group discussions (FGDs) and in-depth interviews with key informants, were used to gain a deeper understanding of the health-seeking behaviour. A quantitative survey of a separate set of respondents used a structured, pre-tested questionnaire to assess which signs were recognized by caregivers as danger signs in neonates.

Participants

The participants were caregivers (mothers, fathers, grandmothers, grandfathers and other female relatives) and health-care providers (community health-care workers, traditional birth attendants (TBAs), nurses, midwives and community doctors). The study included those caregivers who had given primary care to a newborn within the last 6 months, were permanent residents of the village and had consented to participate in the study. For the quantitative study, the first six interviews, if several eligible caregivers were present, were conducted with the mothers. Thereafter, based on availability of respondents, the paternal grandmother, maternal grandmother, grandfather and father were interviewed in order of preference, one per household.

Data collection

An interview guide was used for conducting FGDs and for interviews with key informants. The elements of the interview guide are given in Box 1. On the basis of these findings a structured questionnaire was prepared for use when interviewing caregivers.

Sampling framework and sample size

For the qualitative study, the number of interviews was guided by the point of saturation (i.e. they stopped when no new information was being given). For the quantitative component of the study, which involved recognition of

the individual danger signs, sample sizes were calculated as those needed to obtain adequate statistical precision. To obtain 95% confidence intervals and 7% precision on the assumption that 50% of respondents will recognize a danger sign, we interviewed 200 caregivers.

For key informant interviews, villages were chosen purposively. For FGDs and quantitative interviews, villages were chosen by random selection from 190 villages listed by the governmental Integrated Child Development Services (ICDS) system. For quantitative interviews, the selection of the first household within the village was done by random selection from the list of infants less than 6 months of age, maintained by the *aganwadi* worker (health visitor) employed under the ICDS system. Thereafter, the team went from door to door in a randomly chosen direction to identify eligible households from which to interview caregivers.

Information on the perceptions of 80% of the eligible community health workers and medical practitioners were collected either as key informant interviews, FGDs or structured interviews. Informed consent was obtained from the eligible respondents for participation and none refused.

Data analysis

Representative accounts, anecdotes and case-reports of how practices and perceptions influence the health of neonates were prepared from FGDs and interviews with key informants. These data were manually analysed and structured allowing keywords and phrases to be identified and grouped in domains. Responses were recorded as follows: majority (>75%), most (50–75%), some (25–50%) and few (<25%) respondents gave similar replies. For quantitative data, univariate analysis was used and we report frequency distribution with proportions and 95% confidence intervals.

Ethical aspects

The study was conducted with ethical approval from the Institutional Ethical Review Board of King George's Medical University, Lucknow, and the United States Agency for International Development (USAID) Institutional Review Board established for the Indian Clinical Epidemiology Network.

Results

Data were collected from nine villages (53 caregivers) for the qualitative, and 20 villages (200 caregivers) for the

Box 1. Elements of interview guide

Focus group discussion for health provider

- Perceptions of health workers regarding signs that would require health-care seeking during pregnancy.
- Perceptions of health providers regarding signs that would require health-care seeking for the baby.
- Birthing practices.

Focus group discussion for mothers and other caregivers

- Maternal health conditions during pregnancy resulting in a neonate with poor health.
- Maternal health conditions.
- Beliefs and practices regarding labour, delivery and newborn care.
- Conditions that will tell you that the newborn child is sick.
- Conditions that would require emergency consultation, urgent consultation, or discussion during a routine consultation.

In-depth interviews with caregivers and health workers who cared for a seriously ill neonate in the past year and/or who had experienced a neonatal death or near death in the past 2 years

- How did you know that your newborn child was seriously ill?
- What signs and symptoms did you find which told you that your newborn child was very ill?
- What home remedies did you use to treat the illness of your child?
- Did you seek health care for your sick child?
- From whom did you seek health care for your child? (*Probe* on consultations with traditional healers.)
- Did you seek medical care for your child?
- How many hours after recognizing the signs and symptoms did you take your child to the "doctor" (health-care provider)?
- What was the "doctor's" diagnosis and advice?

quantitative parts of the study. The demographic profile of the caregivers in the quantitative study is shown in Table 1. There were 23 in-depth interviews and 5 FGDs. FGDs were conducted with three groups of eligible mothers and two groups of eligible grandmothers or other female relatives.

Key informant interviews were conducted with medical doctors, general practitioners, paediatricians and neonatal specialists, ($n=4$), other health workers such as ANMs ($n=4$), TBAs ($n=2$) and volunteer health workers ($n=2$). FGDs were also conducted with two groups: one of ANMs and one of TBAs. For quantitative information 10 female health-care workers (ANMs; $n=5$: health supervisors; $n=3$: TBAs; $n=2$) were interviewed, most of whom (80%) had attended a training programme related to care of mothers and neonates in the past 3 years.

Recognition of signs requiring health-care seeking during pregnancy

Based on the analysis of information from key informants, FGDs and structured interviews, caregivers recognized potentially risky conditions during pregnancy rather than clinical signs in the neonate warranting health-care seeking. Most of the respondents considered maternal malnourishment and “small womb” as important risk conditions responsible for producing a “sick” neonate. Conditions in mothers recognized by some as leading to poor pregnancy outcome were: general sickness, “too little intake, particularly of leafy green vegetables,” presence of any illness (fever, vomiting, frequent stools, oedema of legs, “inactiveness” and “maternal overeating and/or eating many times a day”). In contrast few women considered infrequent eating or undereating a risk condition for fetal growth. Medical risk conditions such as decreased fetal movements, anaemia and premature rupture of the membranes were also identified by a few respondents as reasons for seeking health care.

Almost all the health-care workers recognized the following signs requiring medical care during pregnancy: vaginal bleeding, vaginal discharge, anaemia and fever. Some health workers also recognized other conditions requiring health care, such as nausea and vomiting; decreased fetal movements or abdominal pain; abdomen larger than

Table 1. Demographic information on the respondents in quantitative study

Respondent category	Number (n=200)	Percentage
Respondent category		
Mother with infant less than 6 months old	131	65.5
Grandmother/other caregiver	69	34.5
Occupation		
Employed on wages	11	5.5
Agriculture	161	80.5
Self-employed	11	5.5
Business	13	6.5
Education		
Illiterate	128	64
Up to primary level (5th class)	27	13.5
Up to middle level (8th class)	22	11
Up to high-school level (10th class)	15	7.53
Up to intermediate level (12th class)	6	3
Up to graduation	2	1
Religion		
Hindu	191	95.5
Muslim	8	4.0
Other	1	0.5
No. of rooms in house (mean \pm SD^a)	2.99 \pm 1.45	
No. of people in household (mean \pm SD)	7.69 \pm 3.21	
Age (years) (mean \pm SD)		
Mother	27.06 \pm 5.2	
Grandmother/other caregiver	50.59 \pm 13.7	
Monthly income (INR ^b) (mean \pm SD)	2 685.50 \pm 1 428.09	

^a SD = standard deviation.

^b INR = Indian Rupees (INR 47 = US\$ 1).

previous pregnancy; abdomen smaller than previous pregnancy; short stature of the mother; pregnancy at a young age or late pregnancy; oedema of the face, legs or hands; or pain during urination.

Beliefs and practices during the antenatal period

The community believed that certain things were to be avoided during pregnancy. Most believed that pregnant women should avoid tea, rice and certain lentils (*urad dal*) as these were “hot” or “cold” food, and rice was thought to cause a lot of white layering on a neonate’s body at birth. They felt that the mother should not eat fried food or sour food (e.g. pickles). Respondents thought that pregnant women should not eat large quantities of food for fear that the baby would grow too large and the woman would subsequently experience difficulties during delivery or the mother’s stomach would be so full with food that there would not be enough space for the fetus to grow. Pregnant women should also not take “excessive

and unnecessary” rest and should avoid lifting weights, fast walking and climbing stairs. Few recommended abstinence from sex during pregnancy.

Birthing practices

Although most ($n=200$; 70.5%) deliveries took place at home, some women gave birth in government hospitals ($n=52$; 26%) or private hospitals ($n=7$; 3.5%). Home delivery usually took place in a clean room, with the floor painted with cow dung. For delivery boiled water was kept ready together with washed, used cloths. In addition to the mother, there were four other important actors in the birthing process: a local female TBA (*dai*) who assisted in delivery, a local woman belonging to a special class called the *domain* who cut the cord with a new blade and tied it, a local massage-woman (*noun*) who gave mother and child a religious bathing and the ANM/local doctor who gave the mother and baby an injection after delivery. Although few respondents knew the nature of this injection, some of them said it was tetanus

Table 2. Cultural beliefs and practices relating to newborn care and the “perceived rationale” behind each practice

Bathing practices	The baby is bathed the same day he or she is born in both winter and summer. <i>Perceived rationale:</i> to remove vernix which is considered “dirty” and must be removed. Newborn boys are bathed with warm water; girls are bathed with cold water. <i>Perceived rationale:</i> the belief that the girls have more “heat” inside and it is necessary to make their behaviour “calm” and “cool.”
Feeding practices	The baby is generally given honey and water and goat’s milk for at least the first 3 days. <i>Perceived rationale:</i> it is “light” and “nutritious.” Colostrum is not given. <i>Perceived rationale:</i> “first milk” of the mother is thick and indigestible. Breastfeeding is delayed until after the first three days. <i>Perceived rationale:</i> mother’s milk is not “produced” in the body for the first few days and is only “produced” after a few days when the baby comes in contact with the mother.
Postpartum care	Mother is given special diet comprising <i>hareera</i> and <i>sounth laddoos</i> . <i>Perceived rationale:</i> <ul style="list-style-type: none"> • they help to cleanse the mother’s stomach • to produce more milk for the baby.
Eye care procedures	Local preparation <i>kajal</i> is applied to eyes daily. <i>Perceived rationale:</i> <ul style="list-style-type: none"> • child is protected from the evil eye and omens • improves eyesight and makes eyes big.
Skin care procedures	The baby is massaged daily with mustard oil. <i>Perceived rationale:</i> to make him or her healthy and to prevent him from “drying up.”
Cord care procedures	Mustard oil is poured onto the cord daily. <i>Perceived rationale:</i> the cord drops off easily.
Protection from evil spirits	A sharp iron object is kept beside the newborn or an iron object is tied around the neck of newborn. <i>Perceived rationale:</i> it helps to ward off evil. The mother and baby are kept together in a room. <i>Perceived rationale:</i> it helps to ward off evil as well as to protect the child from diseases. The baby should not be taken out in the sun for at least a week. <i>Perceived rationale:</i> protects the child from evil and cold air outside Nobody touches the mother and baby until the mother is out of <i>saour</i> (a period of isolation when nobody touches the mother and baby and they are constantly confined to a room). <i>Perceived rationale:</i> it helps to ward off evil as well as to protect the child from diseases. A fire is lit at the entrance of the mother and baby’s room. <i>Perceived rationale:</i> <ul style="list-style-type: none"> • to protect child from <i>jamoga</i> (stiff jaw and blue skin) • to deter evil spirits • to prevent tetanus.

toxoid. The *dai* also cleans the neonate’s tongue. “She takes a soft cloth dipped in mustard oil and with the help of a finger cleans the child’s mouth. It helps to eject the dirty water out of the child’s stomach; that water which the child had swallowed when in the mother’s stomach.” The *domain* also cleaned the room after delivery and removed the placenta for disposal.

All health providers mentioned bathing or washing the baby immediately after cutting of the cord, oil massage and *kajal* or soot application to the eyes as normal procedures (Table 2). Most mothers initiated breastfeeding almost three days after birth and discarded colostrum ($n=128$; 64%). Pre-lacteal feeds which were given to almost all the neonates soon after birth were honey mixed in water ($n=112$; 56%), cow’s

milk ($n=96$; 48%) or goat’s milk ($n=50$; 25%), generally administered with the help of a cotton wick. Care of the umbilical stump included application of mustard oil to keep away insects. Almost all the caregivers kept the baby out of the sun for at least a week and kept a fire lit for 24 hours at the entrance of the mother and baby’s room to protect them from the evil eye/spirit which results in *Jamogha*, a condition where the neonate’s body turns stiff and blue. Mothers were not allowed to leave the delivery room for 42 days after birth; this period is called the *saour*.

Recognition of danger signs in newborns

Caregivers’ recognition of danger signs in newborns and their corresponding

health seeking behaviour is shown in Table 3. Seventy-nine (39.5%) of the caregivers had seen a sick neonate in their own family in the past 2 years. The clinical presentations seen by them are listed in Table 4. Continuous crying was reported as a common manifestation of neonatal illness and this was supported by the findings of eight key informant interviews with caregivers who had experienced adverse neonatal events or death (data not given).

Utilization of health-care services for sick neonates

Twenty-three per cent (46/200) of respondents sought health care or administered medicines for neonatal illness. The preferred health-care provider was either a local medical doctor (registered

Table 3. Respondents' recognition of the signs and their corresponding health-seeking behaviour (n=200)

Conditions seen in newborn	Recognition of signs (n)	Percentage (95% confidence interval)	Seeking medical care after recognition (n)	Percentage (95% confidence interval)
Irritability	169	84.5 (78.56–89.07)	91	53.84 (46.03–61.47)
Weakness	119	59.5 (52.32–66.3)	67	56.30 (46.91–65.28)
Fever	183	91.5 (86.51–94.82)	128	69.94 (62.66–76.37)
Skin colour				
Yellow	73	36.5 (29.9–43.62)	39	53.42 (41.43–61.05)
Blue	24	12 (7.99–17.51)	4	16.66 (5.48–38.19)
Pale	12	6.0 (3.28–10.49)	3	25.00 (6.69–57.16)
Mottled	9	4.5 (2.21–8.64)	3	33.33 (9.04–69.1)
Presence of more than 10 skin pustules	2	1.0 (0.02–3.18)	0	0.00 (0.00–82.21)
Reduced skin turgor	2	1.0 (0.17–3.94)	0	0.00 (0.00–82.21)
Low temperature	19	9.5 (5.96–14.65)	16	84.21 (59.5–95.83)
Sunken eyes	20	10.0 (6.36–15.22)	4	20.00 (6.61–44.26)
Breathing pattern				
Slow	124	62.0 (54.85–68.67)	71	57.25 (48.06–65.99)
Fast	49	24.5 (18.83–31.16)	40	81.63 (67.49–90.76)
Chest in-drawing	65	32.5 (26.15–39.52)	50	76.92 (64.52–86.1)
Apnoea	69	34.5 (28.02–41.58)	39	56.52 (44.08–68.23)
Grunting	20	10.0 (6.36–15.22)	14	70.00 (45.67–87.16)
Nasal flaring	44	22.0 (16.59–28.51)	22	50.00 (34.79–65.21)
Inability to feed	21	10.5 (6.77–15.81)	4	19.04 (6.28–42.68)
Vomiting or abdominal distention	138	69.0 (62.02–75.23)	78	56.52 (47.83–64.85)
Bulging fontanelle	69	34.5 (28.02–41.58)	58	84.05 (72.83–91.39)
Convulsions/fits	5	2.5 (0.92–6.05)	4	80.00 (29.87–98.95)
Pus draining from the ear	15	7.5 (4.41–12.3)	12	80.00 (51.37–94.69)
Discharge or swelling of the eyelids	8	4 (1.87–8.01)	1	12.5 (0.65–53.32)
Bleeding from cord, anus or mouth; or vomiting blood	5	2.5 (0.92–6.05)	1	20.00 (1.05–70.12)
Discharge from the umbilicus	6	3.0 (1.22–6.72)	3	50.00 (13.95–86.05)
Redness of the skin at the base of the umbilical stump	73	36.5 (29.9–43.62)	0	0.00 (0.00–6.22)
Weak cry	3	1.5 (0.38–4.67)	0	0.00 (0.00–69.00)
Stiff limbs	95	47.5 (40.45–54.65)	43	45.26 (35.13–55.77)
Arousability/wakefulness (lethargic–unconscious)	17	8.50 (5.17–13.48)	0	0.00 (0.00–22.92)
Frequency and character of stool	8	4.0 (1.87–71.97)	3	37.50 (10.24–74.10)
Diarrhoea	131	65.5 (58.42–71.97)	86	65.64 (56.78–73.58)
Tarry stools	49	24.5 (18.83–31.16)	38	77.55 (63.01–87.75)
Blood-tinged stool	12	6.0 (3.28–8.64)	8	66.66 (35.43–88.72)
Decreased frequency of urination	9	4.5 (2.21–8.64)	0	0.00 (0.00–37.11)
Presence of physical malformation	9	4.5 (2.21–8.64)	0	0.00 (0.00–37.11)
Can not move arms or legs	44	22.0 (16.59–28.51)	8	18.18 (8.71–33.23)
Contracted jaw muscles	4	2.0 (0.64–5.37)	1	25.00 (1.31–78.05)

or non-registered) (60.7%; 28/46), followed by a traditional healer (19.6%; 9/46) while the remainder were treated with home remedies. Modern medicines were administered to 78.3% (36/46), while the rest used indigenous medicine and traditional homemade medicines, either alone or in combination with modern medicine. The majority of the respondents who had sought any health care said their neonate “improved” after

treatment and only a few had complications. The main reasons for the choice of health-care provider were their proximity and whether there was “dispensing of medicines” at consultation.

The qualitative study also revealed that traditional medicines were used for bulging fontanelle, chest in-drawing and rapid breathing. Registered or non-registered medical practitioners were consulted only “in case of herbal medicines

failure.” The government services were used only following referral by a local doctor or in self-assessed “critical situations.”

Discussion

In the Sarojnagar community of the Lucknow district of Uttar Pradesh, northern India, the majority (70.5%) of births take place at home, attended by untrained personnel. Most of the neonates were bathed soon after birth;

mothers discarded colostrum and did not start breastfeeding until the third day postpartum. Health-care providers recognized some, but not all, of the danger signs in pregnancy as well as in the neonate. Furthermore, traditional medicines were used for possible cases of neonatal sepsis. These findings possibly explain the high neonatal mortality rate of 51.0 per 1000 live births reported from Lucknow district. A similarly high neonatal mortality rate of 53.6/1000 live births was reported from Uttar Pradesh.⁸

In developing countries, most of the births and deaths of neonates occur at home⁷ and the majority of neonates are not taken to a health-care provider when they are ill.¹ In India less than 25% of deliveries take place in a hospital.⁸ Traditional practices preclude caregivers and parents from taking neonates outside the home even if they are ill. In a study on care-seeking and adherence to treatment for neonatal illnesses conducted in a periurban cohort in New Delhi, India, it was found that 60% of deaths occurred within 24 hours of recognition of illness, 40% of caregivers did not seek outside care, and 70% of care was sought from private providers. Half of these private providers had no formal medical education, and failed to refer 70% of the newborns who eventually died. Fewer than half of caregivers followed referral recommendations.⁹

In Lucknow we found that signs that are frequently observed in sick neonates are recognized by more than one-third of the caregivers, unlike in Bangladesh where there was poor awareness of the danger signs.¹⁰ However, as in Bangladesh, breastfeeding was not initiated until three days after delivery. In other states of India such as Kerala, Tamil Nadu, Mizoram and Meghalaya, a higher rate of early initiation of breastfeeding has been reported.⁸ Although not assessed in the current study, low coverage of antenatal care has been reported from Uttar Pradesh.⁸ Since counselling about breastfeeding is part of antenatal care this could explain the low rates of early initiation of breastfeeding and high rates of pre-lacteal feeding. There is a need to intensify efforts at promotion of breast-feeding as a strategy to reduce neonatal mortality. Except for discarding colostrum, other newborn care practices, such as bathing and massaging the baby with mustard oil are similar to those reported from Pakistan.¹¹

Table 4. Caregivers' report on the presentation of IMNCI "danger signs" in a sick neonate in their care in past 2 years ($n=79$)

Symptom/sign	No. presenting with symptom/sign	Percentage (95% confidence interval)
Fever	57	72.15 (60.75–81.37)
Diarrhoea/loose stools	38	48.10 (36.83–59.56)
Continuous crying	24	30.38 (20.79–41.89)
Cough/breathing problems	39	49.37 (38.03–60.77)
Irritability	5	6.33 (2.35–14.79)
Lethargy	3	3.80 (0.99–11.45)
Inability to feed	13	16.46 (9.39–26.86)
Vomiting	2	2.53 (0.43–9.69)
Abdominal distention/stomach pain	3	3.80 (0.99–11.45)
Pus/pustules	4	5.06 (1.63–13.14)

We found a similarity between caregivers' self-reported recognition of danger signs (Table 3) and those actually observed by them (Table 4). Continuous crying was also observed in sick neonates. This may be considered a danger sign that should be incorporated into the IMNCI list. While 38% (79/200) of caregivers had cared for an ill neonate in the past 2 years, only 23% (46/200) had taken medical advice. Thus, the need for changes in behavioural practices had to be communicated to improve utilization of health services in the study area. A trial conducted in Nepal showed that community-based participatory intervention had a positive impact on uptake of antenatal and delivery services; home care practices; infant morbidity; and health-care seeking.¹² Another cluster-randomized trial conducted in rural India found that training doctors in counselling using the IMNCI approach improved mothers' appreciation of the need to seek prompt and appropriate care for severe episodes of childhood illness, but their care-seeking behaviour did not improve significantly.¹³

We found a paradoxical situation in the study area where modern medicines for neonatal illnesses were dispensed by unqualified health-care providers and traditional medicines were used for potentially bacterial infections. In such cases, the traditional healer plays a major

role in delaying the seeking of appropriate health care for the sick neonate. If we can combine improved care-seeking with better management by doctors and prompt and effective referrals we may reduce neonatal mortality. Similar findings have been reported in a study of care-seeking patterns in malaria patients in the United Republic of Tanzania.¹⁴

The current study was conducted in a rural community using qualitative and quantitative methods to collect data. Although there may have been recall bias in reporting signs by caregivers who had experienced neonatal adverse events in the past 2 years, adverse community practices and continuous crying, a previously unrecognized neonatal danger sign, have been identified. Continuous crying may be incorporated in the IMNCI list of danger signs. The IMNCI training can also be modified locally to emphasize the need to change practices. Similar studies in culturally diverse areas would also be useful. However, since there is no universal recognition of danger signs in pregnant women and neonates, there is an urgent need for improving community awareness by extensive information, education and communication campaigns. ■

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Résumé

Signes d'alerte d'un mauvais état de santé chez le nouveau-né : perception par les personnes s'occupant de nourrissons et par les agents de santé dans le nord de l'Inde

Objectif Déterminer les pratiques domestiques devant être identifiées par les personnes s'occupant des nourrissons et les agents de santé comme potentiellement nuisibles à la santé des nouveau-nés; reconnaître les signes indiquant chez ces enfants la présence d'une maladie ou un besoin de soins de santé; et déterminer la proportion de personnes s'occupant de nourrissons capables de reconnaître les différents éléments guidant l'IMNCI (prise en charge intégrée des maladies néonatales et infantiles).

Méthodes L'étude a été effectuée au sein de la communauté rurale de Sarojininagar dans la province de l'Uttar Pradesh (Inde) au moyen de méthodes de types qualitatif et quantitatif. Ont été inclus dans cette étude des mères, grand-mères, grand-pères, pères ou «tantes» (autres membres féminins de la famille) s'occupant de nourrissons de moins de 6 mois, ainsi que des prestataires de soins de santé reconnus et délivrant des services dans cette zone. Des discussions en groupe cible ($n = 7$), des interrogatoires d'informateurs clés ($N = 35$), ainsi que des entretiens structurés ($n = 210$), ont été menés avec ces sujets.

Résultats De nombreuses pratiques domestiques potentiellement nuisibles à la santé de la mère ou du nouveau-né ont été relevées. Parmi les 200 personnes s'occupant de nourrissons, 70,5 % ont

signalé des accouchements à domicile pratiqués par des aidants sans formation médicale ou des membres de la famille et, pour la plupart des mères, un allaitement au sein ne débutant qu'au 3^e jour après l'accouchement. Plus de la moitié des personnes s'occupant de nourrissons ont identifié la présence de fièvre, l'irritabilité, la faiblesse, un ballonnement abdominal/des vomissements, une respiration lente ou une diarrhée comme des signes d'alerte chez le nouveau-né. Soixante-dix neuf (39,5 %) des personnes s'occupant de nourrissons avaient déjà vu un nouveau-né malade dans leur propre famille au cours des 2 années précédentes, chez lequel la maladie se manifestait par des pleurs continus dans 30,38 % des cas. Des soins de santé ont été apportés à 46 (23 %) des nouveau-nés. Des méthodes relevant des médecines traditionnelles ont été utilisées pour traiter des cas de fontanelle bombante, de thorax en entonnoir ou de respiration rapide.

Conclusion Compte tenu de la reconnaissance non systématique des signes d'alerte chez le nouveau-né et de l'existence de pratiques potentiellement dangereuses avant et pendant l'accouchement, il est prioritaire de mettre en œuvre l'IMNCI et d'envisager la prise en compte des pleurs continus parmi les signes d'alerte.

Resumen

Signos de peligro de las enfermedades neonatales: impresiones de los cuidadores y de los trabajadores sanitarios en el norte de la India

Objetivo Evaluar las prácticas domésticas que pueden influir en la salud neonatal desde la perspectiva de los cuidadores y los trabajadores sanitarios; identificar los signos observables en los recién nacidos que conducen al reconocimiento de enfermedades y la búsqueda de atención sanitaria; y evaluar la proporción de cuidadores capaces de reconocer los distintos elementos del programa de atención integrada a las enfermedades neonatales y de la infancia (IMNCI).

Métodos El estudio se llevó a cabo en una comunidad rural de Sarojininagar Block, Uttar Pradesh, India, usando técnicas de investigación cualitativas y cuantitativas. Participaron en él madres, abuelas, abuelos, padres y «niñeras» (otros familiares femeninos) que cuidaban a lactantes de menos de 6 meses, así como dispensadores de salud acreditados que trabajaban en la zona. Con ellos se organizaron grupos de discusión dirigidos ($n = 7$), entrevistas con informantes clave ($n = 35$) y entrevistas estructuradas ($n = 210$).

Resultados Se observaron muchas prácticas domésticas que podían perjudicar la salud materna y neonatal. De 200 cuidadores,

el 70,5% informaron de partos en el hogar atendidos por enfermeras no preparadas o por familiares, y la mayor parte de las madres sólo empezaban a dar el pecho al tercer día. Más de la mitad de los cuidadores reconocían la fiebre, la irritabilidad, la debilidad, la distensión abdominal/vómitos, la respiración lenta y la diarrea como signos de peligro en los recién nacidos. Setenta y nueve (39,5%) cuidadores habían atendido a un recién nacido enfermo en la familia en los dos últimos años, y en un 30,38% de los casos la enfermedad se manifestó en forma de llantos continuos. Se buscó atención sanitaria para 46 recién nacidos (23%). Se usaron medicinas tradicionales para tratar casos de abombamiento de la fontanela, tiraje torácico y respiración rápida.

Conclusiones Teniendo en cuenta la falta de criterios universales para reconocer los signos de peligro en los recién nacidos, así como los riesgos que encierran algunas prácticas de atención prenatal y asistencia al parto, es necesario dar prioridad a la aplicación de la IMNCI, y considerar la posible inclusión del llanto continuo entre los signos de peligro.

ملخص

علامات الخطر لأمراض الوُلدان:

ما يفهمه مقدّمو الرعاية والعاملون الصحيون في شمال الهند

الهدف: تقييم الممارسات الأسرية التي يمكن أن تؤثر على صحة الوُلدان، من وجهة نظر القائمين على إيتاء الرعاية الصحية والعاملين الصحيين، والتعرّف على علامات لدى الوُلدان تقود إلى معرفة المرض أو إلى التماس الرعاية الصحية، والتأكد من وجود نسبة كافية من القائمين على إيتاء الرعاية الصحية، ممن يعرفون العناصر الفردية لبرنامج التدبير المتكامل لأمراض الأطفال والوُلدان.

الطريقة: أُجريت الدراسة في مجتمع ريفي في منطقة ساروجينين آجار، في ولاية عطار براديش في الهند، بتصميمات للبحوث الكمية والكيفية، وقد شارك في هذه الدراسة الأمهات والجَدّات والآباء والأجداد وبعض الأقارب الوثيقي الصلة بالأسرة ممن يقومون بإيتاء الرعاية للأطفال الذين تقل عن أعمارهم عن ستة شهور إلى جانب القائمين على الرعاية الصحية الذين عرفوا بخدمتهم في تلك المنطقة. وأجريت مع هؤلاء المشاركين 7 مناقشات لمجموعات بؤرية، و 35 مقابلة مع المعنّيين من ذوي المعرفة والاهتمام، و 210 مقابلات مسبقة التحضير.

الموجودات: لوحظ الكثير من الممارسات الأسرية التي قد تؤثر تأثيراً سلبياً

على صحة الأمهات والوُلدان. فمن بين مئتين من القائمين على إيتاء الرعاية الصحية، أبلغ 70.5% منهم عن أن الولادات قد تمت في المنزل وأشرف عليها أحد الأقارب أو الممرضات غير المدربّات، وأن معظم الأمهات لم يبدأن بالإرضاع من الثدي إلا بعد مرور ثلاثة أيام على ولادتهن. وقد كان لدى أكثر من نصف القائمين على إيتاء الرعاية الصحية المعرفة بأن الحمى والتهييج والضعف وتوسّع البطن والإقياء وبطء التنفس والإسهال تعدّ من علامات الخطر لدى الوُلدان. وقد شاهد 79 من القائمين على الرعاية الصحية (39.5%) أحد الوُلدان مريضاً لدى الأسرة خلال السنتين الماضيتين، وكان المرض لدى 30.38% منهم بشكل بكاء مستمر. وقد التمسّت الرعاية الصحية لـ 46 وليداً (23%). وقد استخدمت الأدوية العشبية (التقليدية) لمعالجة انتباج أو تبارز اليوافيخ، والسحب الصدري إلى الداخل وتسرع التنفس.

الاستنتاج: نظراً لغياب التعرّف الشامل على علامات الخطر لدى الوُلدان، ولاحتمال أن يلي ذلك ممارسات مؤذية للوُلدان وللولادة، فإن الحاجة ماسة لإيلاء الأولوية لتنفيذ برنامج التدبير المتكامل لأمراض الأطفال والوُلدان، مع إمكانية إدماج البكاء المتواصل ضمن علامات الخطر الإضافية.

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