



Maternal Knowledge Of Neonatal Danger Signs And Health Seeking Practices: A Community Based Cross-Sectional Study In Lucknow.

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Abstract

Background: Early identification of neonatal danger signs is crucial for preventing newborn morbidity and mortality. **Objective:** To assess maternal knowledge, perception, experience, and health-seeking behaviour regarding neonatal danger signs, and to determine factors associated with good maternal knowledge. **Methods:** A community-based cross-sectional study among 372 mothers collected data on socio-demographic characteristics, knowledge of neonatal danger signs, and health service utilization. Chi-square tests were used to determine associations. **Results:** Most mothers had secondary education (48.7%), while 25.8% had no education. High-grade fever (91.9%), convulsions (85.5%), and poor feeding (74.2%) were the most recognized neonatal danger signs. Only 54.3% of mothers had good knowledge. Factors significantly associated with good knowledge included maternal education ($p=0.001$), income ($p=0.001$), maternal occupation ($p=0.001$), ANC visits ($p=0.001$), PNC visits ($p=0.009$), husband's involvement ($p=0.001$), and counselling on danger signs ($p=0.029$). **Conclusion:** Maternal knowledge was moderate, with significant gaps in recognizing subtle but critical neonatal danger signs. Strengthening counselling during ANC/PNC visits and promoting family involvement are essential to improve early detection and reduce neonatal morbidity and mortality.

Keywords: Neonatal Mortality, Neonatal Danger Signs, Maternal Knowledge, Care-Seeking Behavior.



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INTRODUCTION

Neonatal mortality continues to pose a major global health challenge, particularly in low- and middle-income countries where early danger signs often go unnoticed or untreated (3,4). Many neonatal deaths occur due to preventable or treatable causes when recognized early. The World Health Organization (WHO) identifies key neonatal danger signs that require immediate medical attention (1,2). Maternal knowledge of these signs is essential for prompt care-seeking behaviour and timely intervention (7,9,11). However, studies from Ethiopia, Nigeria, and South Asia show that maternal knowledge is often inadequate, influenced by educational level, access to maternal health services, and socio-economic factors (7,10,11). Understanding mothers' awareness, prior experiences, and the socio-demographic factors influencing knowledge is crucial in developing targeted interventions to reduce neonatal morbidity and mortality (6). This study assesses maternal knowledge, perception, and experiences regarding neonatal danger signs, healthcare-seeking behaviours, and the determinants of good knowledge.

MATERIALS AND METHODS

Study Design-A community-based cross-sectional study was conducted among 372 mothers.

Data Collection-A structured, pretested, interviewer-administered questionnaire was used to obtain information on:

1. socio-demographic characteristics
2. maternal knowledge of neonatal danger signs
3. prior experience with danger signs
4. health-seeking practices
5. ANC and PNC service utilization

6. counselling after delivery

Outcome Variable- Maternal knowledge was categorized as good or poor based on the number of correctly identified WHO neonatal danger signs relative to the median score(1,2).

Data Analysis- Using SPSS v29 software, data were analysed. Frequencies and percentages summarized the data. Chi-square tests examined associations between maternal knowledge and independent variables. A p-value <0.05 was considered statistically significant.

Ethical clearance was obtained from the institutional ethical review committee. A written informed consent was taken from each of the study participants after a clear explanation of the aim of the study.

RESULTS

Among the 372 mothers surveyed, the socio-demographic profile indicated that nearly half (49.7%) were aged between 26 and 35 years. Educational attainment varied, with 48.7% having a secondary education, though a significant minority of 25.8% lacked formal schooling. The majority were housewives (62.4%) and Hindu (93.8%), with most families being relatively small (58.6% had 2–4 members). A positive trend in family dynamics was noted by the high rate of husband involvement in newborn care (69.4%), corresponding with husbands commonly having a secondary education (53.5%). Knowledge of neonatal danger signs was high for universally recognized acute symptoms such as high-grade fever (91.9%), convulsions (85.5%), poor sucking/feeding (74.2%), and unconsciousness (71.0%). Conversely, knowledge gaps were evident for less obvious or chronic signs, with low body temperature and reduced movement being the least recognized indicators (both 33.6%), followed by yellow discoloration (43.3%) and umbilical redness/pus (41.4%).

A total of 202 mothers (54.3%) had good knowledge. About 62.9% of mothers had previously observed one or more danger signs in their newborns or older children during the neonatal period.

The utilization of maternal healthcare services in the study population presents a mixed picture. While a strong majority (84.9%) chose government hospitals for delivery, and 70.2% met the benchmark of having four or more antenatal care (ANC) visits, there are clear gaps in accessibility and follow-up care. A significant barrier is the long travel time, with 77.4% of individuals requiring more than 30 minutes to reach the nearest facility. Postnatal care (PNC) also shows room for improvement, as the follow-up rate declined to 60.8% for initial visits and 58.1% for at least two visits. Educational efforts appear moderately successful, with 65.9% receiving counselling on neonatal danger signs. Finally, a notable 15.9% of the population reported a history of neonatal death, indicating a high-risk cohort that may require more intensive, targeted interventions.

When danger signs occurred, the majority of individuals sought care within the formal healthcare system, primarily at government hospitals (51.9%) and health centres (27.1%), with a smaller fraction utilizing private clinics (8.1%). However, a concerning minority either used home remedies (4.8%), did nothing (6.5%), or visited traditional healers (1.6%).

Good maternal knowledge regarding these signs was significantly associated with several key factors, all demonstrating a strong statistical relationship (p-values of 0.001 or 0.009/0.029). These factors include higher maternal education, higher family income, the mother's occupation, having four or more antenatal care visits, receiving postnatal care, the husband's involvement, and receiving counselling after delivery. This indicates that socioeconomic status and engagement with the formal healthcare system are crucial determinants of a mother's knowledge level and, consequently, their health-seeking behaviours during critical times.

	Social-Demographic of Parents	Frequenc y	Percen t
1	Age of mother		
1.1	18-25 years	163.00	43.80
1.2	26-35 years	185.00	49.70
1.3	>35 years	24.00	6.50
2	Mother's education		
2.1	No formal education	96.00	25.81
2.2	Primary education	66.00	17.74
2.3	Secondary education	181.00	48.66
2.4	Diploma and above	29.00	7.80
3	Mother's occupation		
3.1	Housewife	232.00	62.37
3.2	Government Employed	12.00	3.23
3.3	Self-Employed	102.00	27.42
3.4	Student	26.00	6.99
4	Religion		
4.1	Hindu	349.00	93.82
4.2	Muslim	23.00	6.18
5	Marital status		
5.1	Married		
5.2	Unmarried		
6	Family size		
6.1	2-4	218.00	58.60
6.2	>4	154.00	41.40
7	Husband's education		
7.1	No formal education	78.00	20.97
7.2	Primary education	30.00	8.06
7.3	Secondary education	199.00	53.49
7.4	Diploma and above	65.00	17.47
8	Husband's occupation		
8.1	Not Working	90.00	24.19
8.2	Government Employed	173.00	46.51
8.3	Self-Employed	92.00	24.73
8.4	Student	17.00	4.57
9	Husband's involvement		

DISCUSSION

Most mothers were aged 26-35 years (49.7%). Nearly half had secondary education, while 25.8% had no formal schooling. Similar distributions have been reported in other community-based neonatal health studies(5,7).

This study found that only slightly more than half of the mothers had good knowledge of neonatal danger signs, comparable to findings in Ethiopia and Nigeria (7,10,11).

Recognition was highest for easily noticeable symptoms such as fever and convulsions, consistent with other studies from Ethiopia, Nigeria, and South Asia. However, awareness of hypothermia and reduced activity—often early indicators of severe neonatal illness—was low. WHO and UNICEF report that these missed signs contribute significantly to neonatal mortality (1,3,4).

Maternal education, income, ANC/PNC utilization, and counselling showed significant associations with good knowledge, aligning with global evidence that maternal health service uptake improves awareness and care-seeking behaviours(12,13). Husband involvement also strongly influenced knowledge, suggesting that family-centered newborn care strategies could be beneficial and improves maternal and newborn outcomes (14).

While most mothers sought healthcare promptly when danger signs appeared, a small proportion still used home remedies or delayed care, underscoring the need for intensified community education, reflecting similar patterns in other studies (8,15).

CONCLUSION

Maternal knowledge of neonatal danger signs was moderate, with substantial gaps in identifying less obvious but clinically significant signs. Strengthening counselling during ANC and PNC contacts, increasing community awareness, and involving husbands in newborn care could significantly enhance early detection and timely treatment of neonatal illnesses.

KEY MESSAGES-

1. Integrate structured neonatal danger signs counselling into every ANC and PNC visits.
2. Conduct community-level awareness drives focusing on low-recognition signs such as hypothermia and reduced activity.
3. Promote male partner involvement in maternal and newborn health programs.
4. Improve accessibility to healthcare facilities through transport support or community health workers.

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