

Awareness and Health Care Seeking Behaviour for Newborn Danger Signs Among Mothers in Rural Area**Vijay Kumar Chaudhary¹, Raunaque Jabeen², Hemant Kumar³, Chandra Mani⁴, Prabhat Kumar Lal⁵**¹Associate Professor, Department of Community Medicine, Darbhanga Medical College and Hospital, Laheriasarai, Darbhanga, Bihar, India²Tutor, Department of Community Medicine, Darbhanga Medical College and Hospital, Laheriasarai, Darbhanga, Bihar, India³Associate Professor, Department of Community Medicine, Darbhanga Medical College and Hospital, Laheriasarai, Darbhanga, Bihar, India⁴Associate Professor, Department of Community Medicine, Darbhanga Medical College and Hospital, Laheriasarai, Darbhanga, Bihar, India⁵Professor, Department of Community Medicine, Darbhanga Medical College and Hospital, Laheriasarai, Darbhanga, Bihar, India

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Conflict of interest: Nil

Abstract:

Background: Newborn health remains a major public health concern, particularly in rural areas where access to healthcare services is limited. Early recognition of newborn danger signs and prompt health-care seeking behaviour are critical to reducing neonatal morbidity and mortality. This study aimed to assess the level of awareness and health-care seeking behaviour regarding newborn danger signs among mothers in rural areas. A community-based cross-sectional study was conducted among mothers who had delivered within the past 12 months. Data were collected using a structured and pretested questionnaire focusing on knowledge of key newborn danger signs—such as poor feeding, fever, hypothermia, fast breathing, convulsions, lethargy, jaundice, and umbilical infection—and patterns of health-care seeking. Descriptive and inferential statistical analyses were performed to determine associations between socio-demographic factors and awareness levels.

The findings revealed that while a majority of mothers recognized at least one danger sign, comprehensive knowledge of multiple critical signs was limited. Fever and difficulty in breathing were the most commonly identified danger signs, whereas hypothermia and convulsions were less frequently recognized. Although many mothers reported seeking care from government or private health facilities, delays in decision-making and preference for home remedies or traditional healers were noted in some cases. Maternal education, antenatal care attendance, and exposure to health education were significantly associated with better awareness and timely health-care seeking behavior. The study concludes that awareness of newborn danger signs among rural mothers remains inadequate, which may contribute to delays in appropriate care. Strengthening community-based health education programs and promoting maternal counseling during antenatal and postnatal visits are recommended to improve early recognition and prompt treatment, thereby reducing preventable neonatal deaths.

Conclusion: The present study highlights that awareness of newborn danger signs among mothers in rural areas remains moderate but not comprehensive. Although most mothers were able to identify at least one danger sign—particularly fever and difficulty in breathing—knowledge of other critical signs such as hypothermia, convulsions, and lethargy was limited.

Keywords: Newborn Danger Signs, Maternal Awareness, Healthcare Seeking Behaviour, Rural Mothers, Neonatal Health, Community Health.

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Introduction

The neonatal period, defined as the first 28 days of life, is the most vulnerable phase for child survival. Globally, a significant proportion of under-five mortality occurs during this period, with the highest burden in low- and middle-income countries. In

India, neonatal mortality remains a major public health challenge, particularly in rural areas where access to quality maternal and child health services is often limited. Most neonatal deaths are caused by preventable and treatable conditions such as birth

asphyxia, infections, prematurity, and complications related to low birth weight. Early identification of newborn danger signs—such as poor feeding, fever, hypothermia, fast breathing, chest indrawing, convulsions, jaundice, and lethargy—is critical for timely intervention. The World Health Organization emphasizes that prompt recognition of these signs and immediate care-seeking can significantly reduce neonatal morbidity and mortality. Mothers are usually the primary caregivers and decision-makers regarding newborn care, especially in rural households. Their awareness of danger signs and their health-care seeking behavior play a crucial role in determining newborn survival. However, socio-cultural beliefs, lack of education, financial constraints, gender norms, distance to health facilities, and reliance on traditional healers often influence care-seeking patterns in rural communities.

Although several national programs in India focus on improving maternal and child health services, gaps remain in maternal knowledge and timely utilization of health facilities. Understanding the level of awareness and the determinants of health-care seeking behavior among mothers in rural areas is essential for designing effective community-based interventions. Therefore, this study aims to assess the awareness of newborn danger signs and examine health-care seeking behaviour among mothers residing in rural areas, with the goal of identifying gaps and informing strategies to improve neonatal outcomes.

Materials and Methods

Study Design: A community-based cross-sectional study was conducted in selected rural areas of India over a period of Twenty months. At Darbhanga Medical College and Hospital, Laheriasarai, Darbhanga. The study was carried out in villages under the jurisdiction of a selected Primary Health Centre (PHC).

Study Population: The study included mothers who had delivered a live newborn within the previous 12 months and were permanent residents of the selected rural area. Mothers who were seriously ill at the time of data collection or unwilling to participate were excluded.

Sample Size and Sampling Technique: A total of 76 mothers were included in the study. Eligible participants were identified with the assistance of Accredited Social Health Activists (ASHAs) and Anganwadi workers. A simple random sampling technique was used to select participants from the list of eligible mothers in the selected villages.

Data Collection Tool and Procedure: Data were collected using a structured, pre-tested questionnaire developed according to guidelines from the World Health Organization on essential newborn danger

signs.

The questionnaire consisted of four sections:

1. Socio-demographic details: age, education, occupation, family type, and socioeconomic status.
2. Obstetric history: parity, antenatal care visits, place and mode of delivery.
3. Awareness of newborn danger signs: including poor feeding, fever, hypothermia, fast breathing, chest indrawing, convulsions, jaundice, and umbilical infection.
4. Health-care seeking behaviour: type of care sought, time taken to seek care, and barriers faced.

Face-to-face interviews were conducted in the local language after obtaining informed consent. The questionnaire was pre-tested in a nearby village to ensure clarity and reliability.

Operational Definitions

- Adequate awareness: Mothers who correctly identified at least three key newborn danger signs.
- Appropriate health-care seeking behaviour: Seeking care from a qualified health facility within 24 hours of recognizing a danger sign.

Data Analysis: The collected data were entered into Microsoft Excel and analyzed using SPSS version. Descriptive statistics such as frequencies, percentages, mean, and standard deviation were calculated. The association between awareness levels and socio-demographic variables was assessed using the chi-square test. A p-value of <0.05 was considered statistically significant.

Ethical Considerations: Ethical approval was obtained from the Institutional Ethics Committee prior to the commencement of the study. Written informed consent was obtained from all participants, and confidentiality of the information was strictly maintained.

Results

The majority of mothers were in the age group of 20–29 years. Most participants were homemakers, and a considerable proportion had completed primary or secondary education. The majority belonged to joint families and were from lower or middle socioeconomic status. Most mothers had attended at least three antenatal care visits, and the majority of deliveries occurred in government health facilities.

Awareness of Newborn Danger Signs: Out of 76 mothers, the majority were able to identify at least one newborn danger sign. However, only a moderate proportion demonstrated adequate awareness (identified three or more danger signs).

The most commonly recognized danger signs were:

- Fever
- Difficulty in breathing / fast breathing
- Poor feeding

Less commonly recognized danger signs included:

- Hypothermia (low body temperature)
- Convulsions
- Lethargy/unconsciousness
- Umbilical infection

Overall, comprehensive knowledge of all key newborn danger signs was limited among the study participants.

Health-Care Seeking Behaviour: Among mothers who reported that their newborn had experienced at least one danger sign, the majority sought care from a government health facility, while some consulted private practitioners. A small proportion initially used home remedies or sought advice from traditional healers before visiting a health facility.

Approximately half of the mothers sought medical care within 24 hours of recognizing a danger sign, while others reported delays due to factors such as:

- Lack of transportation
- Financial constraints
- Distance to health facility
- Lack of decision-making autonomy

Association Between Variables: Higher maternal education, increased number of antenatal care visits, and institutional delivery were significantly associated with better awareness of newborn danger signs and timely health-care seeking behaviour ($p < 0.05$).

Overall, the findings indicate that although most mothers were aware of at least one newborn danger sign, adequate knowledge and prompt health-care seeking behaviour remain suboptimal in the rural study area.

Discussion

The present study assessed awareness and health-care seeking behaviour regarding newborn danger signs among 76 mothers in a rural area. The findings indicate that although most mothers were able to recognize at least one danger sign, comprehensive knowledge of multiple key danger signs was limited. This suggests that while basic awareness exists, depth of understanding remains inadequate. In this study, fever and difficulty in breathing were the most commonly recognized danger signs. Similar patterns have been reported in other rural-based studies, where visible and easily noticeable symptoms tend to be better recognized compared to less obvious signs such as hypothermia or convulsions. Poor recognition of critical signs like lethargy and hypothermia is concerning, as delayed

identification may lead to serious complications or neonatal mortality. The study also revealed that about half of the mothers sought care within 24 hours of identifying a danger sign. Although the majority preferred government health facilities, delays in care-seeking were observed due to transportation issues, financial limitations, distance to health centers, and decision-making constraints within families. These findings highlight persistent structural and socio-cultural barriers in rural areas. Maternal education was found to have a significant association with awareness and timely health-care seeking behaviour. Mothers with higher educational status demonstrated better knowledge of newborn danger signs and were more likely to seek early medical care. Antenatal care attendance and institutional delivery were also positively associated with improved awareness, emphasizing the importance of counseling during maternal health service utilization. The findings align with recommendations from the World Health Organization, which stress the importance of community-based education and strengthening maternal counseling to improve early recognition of neonatal illness. In rural areas of India, frontline health workers such as ASHAs and ANMs play a crucial role in disseminating information about essential newborn care and danger signs.

Overall, the study underscores the need for strengthening health education initiatives at the community level. Regular awareness programs, improved access to health facilities, and reinforcement of counseling during antenatal and postnatal visits may enhance mothers' knowledge and promote timely health-care seeking behaviour, ultimately contributing to the reduction of preventable neonatal morbidity and mortality.

Conclusion

The present study highlights that awareness of newborn danger signs among mothers in rural areas remains moderate but not comprehensive. Although most mothers were able to identify at least one danger sign—particularly fever and difficulty in breathing—knowledge of other critical signs such as hypothermia, convulsions, and lethargy was limited. Health-care seeking behaviour was generally favorable, with the majority preferring government health facilities; however, delays in seeking care were observed due to transportation difficulties, financial constraints, and socio-cultural factors. Maternal education, antenatal care attendance, and institutional delivery were significantly associated with better awareness and timely care-seeking practices. The findings emphasize the need for strengthened community-based health education and counseling during antenatal and postnatal visits. Enhancing the role of frontline health workers and reinforcing messages on newborn danger signs, as recommended by the World Health Organization,

can improve early recognition and prompt treatment. Improving maternal awareness and reducing barriers to accessing health services in rural areas of India are essential steps toward reducing preventable neonatal morbidity and mortality.

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