



A DESCRIPTIVE STUDY TO ASSESS THE KNOWLEDGE REGARDING DANGER SIGNS OF NEWBORN ILLNESS AMONG POSTNATAL MOTHERS FOLLOWED BY INFORMATION BOOKLET IN SELECTED HOSPITALS IN THE CITY

Health Science (Nursing)

Ms. Sneha vijay kharat*

M.Sc. Nursing, Department Of Obstetrics and Gynecology Nursing, Suretech College Of Nursing Nagpur. *Corresponding Author

Ms. Nikita Kishor Dhanorkar

Professor, (Research Guide), Department Of Obstetrics and Gynecology Nursing, Suretech College Of Nursing Nagpur.

ABSTRACT

Background: Early recognition of newborn danger signs is essential for reducing neonatal morbidity and mortality. Mothers, as primary caregivers, play a crucial role in identifying these signs and seeking timely medical care. However, inadequate knowledge regarding neonatal danger signs remains a major public health concern. **Objectives:** To assess the knowledge regarding danger signs of newborn illness among postnatal mothers and determine its association with selected demographic variables. **Methods:** A descriptive research design was adopted among 60 postnatal mothers admitted to selected hospitals in the city. Participants were selected using a non-probability purposive sampling technique. Data were collected using a structured questionnaire comprising demographic variables and a 30-item knowledge questionnaire on newborn danger signs. Descriptive and inferential statistics, including frequency, percentage, mean, standard deviation, Chi-square test, ANOVA, and t-test, were used for data analysis. **Results:** Among the participants, 41.67% had poor knowledge, 25.00% had moderate knowledge, 16.67% had good knowledge, and 16.67% had excellent knowledge regarding newborn danger signs. Significant associations were observed between knowledge scores and age, educational status, occupation, mode of delivery, number of children, and previous knowledge ($p < 0.05$). No significant association was found with type of family, place of residence, or source of information. **Conclusion:** The study concluded that most postnatal mothers had inadequate knowledge regarding danger signs of newborn illness. Structured health education, including information booklets and counselling, can improve maternal awareness, promote timely healthcare-seeking behaviour, and contribute to reducing preventable neonatal morbidity and mortality.

KEYWORDS

Postnatal Mothers; Newborn Danger Signs; Neonatal Illness; Knowledge; Information Booklet; Nursing Education.

INTRODUCTION

"No matter their scars or their limitations, every child is precious."

– Dr. Karyn Purvis

The newborn period, extending from birth to 28 days of life, is the most vulnerable phase of childhood and requires appropriate care and timely recognition of illness. During this period, newborns undergo important physiological adaptations to extrauterine life, and failure to identify early danger signs can result in delayed treatment and increased neonatal morbidity and mortality. Studies have reported inadequate awareness among caregivers regarding neonatal danger signs, leading to delays in seeking appropriate healthcare. Essential newborn care includes maintaining warmth, promoting breastfeeding, preventing infections, ensuring proper cord care, immunization, and early recognition of neonatal danger signs requiring immediate medical attention.¹⁻³

Neonatal mortality remains a major public health challenge, particularly in developing countries. According to the World Health Organization (WHO), approximately 5.3 million children under five years die globally, with nearly half of these deaths occurring during the neonatal period. Important neonatal danger signs include poor feeding, lethargy, abnormal body temperature, fast breathing, severe chest indrawing, and convulsions, all of which require prompt medical attention. In 2023, approximately 2.3 million neonatal deaths were reported worldwide, accounting for 47% of all under-five deaths, with nearly 75% occurring during the first week of life. Improving postnatal mothers' knowledge regarding neonatal danger signs is therefore essential for promoting timely healthcare-seeking behavior and reducing preventable neonatal deaths.⁴⁻⁵

BACKGROUND OF THE STUDY

Neonatal danger signs, proposed by the World Health Organization (WHO) and UNICEF, indicate serious illness in newborns requiring immediate medical attention. Early recognition and timely healthcare-seeking are essential for improving neonatal survival; however, inadequate knowledge among caregivers remains a major challenge. Studies from Uganda, India, Ethiopia, and Nigeria have reported that 38–85% of caregivers have poor knowledge regarding neonatal danger signs. These danger signs include cough, difficulty or fast breathing, lethargy, convulsions, fever, hypothermia, poor feeding, persistent vomiting, diarrhea, jaundice, eye discharge, and umbilical discharge. A study conducted in Wardha, India, among 1,160 mothers found that although 67.2% of mothers knew at least one neonatal danger sign,

only 41.8% sought treatment from government or private hospitals for sick newborns. Similarly, a study in Chennai among 430 postnatal mothers reported poor recognition of hypothermia and lethargy despite good awareness of fever, diarrhea, and vomiting, while a recent systematic review and meta-analysis of 14 cross-sectional studies in Ethiopia reported an overall maternal knowledge of neonatal danger signs of only 40.7% (95% CI: 25.72–55.67). These findings highlight the need to improve mothers' knowledge regarding neonatal danger signs to promote early healthcare-seeking and reduce neonatal morbidity and mortality.⁶⁻¹¹

NEED OF THE STUDY

Newborn mortality remains a major public health concern, accounting for nearly 47% of under-five deaths worldwide, with an estimated 2.3 million neonatal deaths reported in 2022. Many of these deaths are preventable through early recognition of neonatal danger signs and timely healthcare-seeking. In India, the Neonatal Mortality Rate was 20 per 1,000 live births in 2020, while Maharashtra reported 16 per 1,000 live births, indicating the continued need for improving maternal awareness. Previous studies have reported inadequate knowledge of neonatal danger signs among postnatal mothers and identified maternal education, postnatal follow-up, and health education as important influencing factors.^{14-16, 21} During the investigator's clinical posting in the postnatal ward and NISU specialty area, it was observed that many postnatal mothers were unaware of newborn danger signs, including poor feeding. Therefore, the present study was undertaken to assess the knowledge regarding danger signs of newborn illness among postnatal mothers and provide an information booklet to improve their awareness and promote timely healthcare-seeking behaviour.

HYPOTHESIS

There will be tested at 0.05 level of significance.

- **H0:** There is no significant association between demographic variable and level of knowledge regarding danger signs of newborn illness among postnatal mothers.
- **H1:** There is significant association between demographic variable and level of knowledge regarding danger signs of newborn illness among postnatal mothers.

OBJECTIVE OF THE STUDY

Primary objectives

1. To assess the existing knowledge regarding the danger signs of newborn illness among postnatal mothers

Secondary objectives

1. To find out the association between knowledge score with selected demographic variables.

METHODOLOGY

Research Approach

The present study adopted a quantitative research approach to assess the knowledge regarding danger signs of newborn illness among postnatal mothers in selected hospitals. This approach was appropriate as the findings were measured and analyzed using numerical data.

Research Design

The present study adopted a descriptive research design to assess the knowledge regarding danger signs of newborn illness among postnatal mothers in selected hospitals. The design was appropriate to describe the existing level of knowledge and its association with selected demographic variables without manipulating any variables.

Setting of the Study

The study was conducted in selected hospitals of the city among postnatal mothers admitted to the postnatal wards who fulfilled the inclusion criteria.

Population

Target Population: The target population included all postnatal mothers in the city who had recently delivered babies and were in the postnatal period.

Accessible Population: The accessible population consisted of postnatal mothers admitted to the selected hospitals during the data collection period who met the inclusion criteria.

Sample Size and Sampling Technique

The study included 60 postnatal mothers admitted to the postnatal wards of selected hospitals who fulfilled the inclusion criteria. A non-probability purposive sampling technique was used to select the participants who were available during the data collection period.

Inclusion Criteria

- Postnatal mothers who delivered within the last 6 weeks.
- Mothers admitted in postnatal wards of selected hospitals during data collection.
- Mothers who can read, write, or understand the language of the tool.
- Mothers who are willing to participate in the study.

Exclusion Criteria

- Mothers who are critically ill or unable to participate due to medical conditions.
- Mothers who are not available at the time of data collection (discharged or transferred).
- Mothers with cognitive impairments affecting comprehension of the questionnaire.

TOOL FOR DATA COLLECTION

Data were collected using a structured questionnaire developed by the investigator after an extensive review of the literature and expert consultation. The tool consisted of two parts: Part I included seven items on demographic variables (age, educational qualification, occupation, type of family, monthly family income, parity, and source of health information), and Part II comprised 30 multiple-choice questions assessing knowledge regarding danger signs of newborn illness, including general knowledge, recognition of danger signs, and basic home care of newborns. Each correct response was awarded one mark, with a maximum score of 30. Knowledge scores were categorized as poor (0–6), average (7–12), good (13–18), very good (19–24), and excellent (25–30).

PILOT STUDY AND RELIABILITY

A pilot study was conducted on 25 August 2025 among 10% of the proposed sample, who met the inclusion criteria but were not included in the main study, to assess the feasibility, clarity, and reliability of the research tool. The findings confirmed that the questionnaire was feasible, clear, and understandable, and minor modifications were made to improve readability. The internal consistency of the questionnaire was assessed using Cronbach's alpha, which yielded a reliability coefficient of 0.82, indicating good reliability. The main data collection was conducted over a period of 6 weeks to recruit the required sample of 60 postnatal mothers.

Data Collection Procedure

The main study was conducted from 30 August 2025 to 12 September 2025 among 60 postnatal mothers admitted to selected hospitals in the city. Eligible participants were recruited using a non-probability purposive sampling technique. Written informed consent was obtained after explaining the purpose of the study. Data were collected using a structured knowledge questionnaire, which required approximately 15–20 minutes to complete. Following data collection, an information booklet on danger signs of newborn illness was distributed to all participants, and its contents were briefly explained.

Statistical Analysis

Data were analyzed using SPSS. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to summarize the data, while the Chi-square test was applied to determine the association between knowledge scores and selected demographic variables. A p-value <0.05 was considered statistically significant.

RESULT

A total of 60 postnatal mothers participated in the study. The majority of mothers were aged 21–25 years (33.33%), had secondary education (41.67%), were housewives (50%), belonged to nuclear families (46.67%), resided in rural areas (50%), had normal vaginal delivery (58.33%), and were primiparous (50%). Most participants (65%) had no previous knowledge regarding newborn danger signs, while 35% reported prior knowledge, with media (18.33%) being the most common source of information.

Assessment of knowledge regarding danger signs of newborn illness revealed that 41.67% of postnatal mothers had poor knowledge, 25.00% had moderate knowledge, 16.67% had good knowledge, and 16.67% had excellent knowledge. These findings indicate that the majority of mothers possessed inadequate knowledge regarding neonatal danger signs.

Analysis of the association between knowledge scores and selected demographic variables demonstrated statistically significant associations with maternal age ($\chi^2=17.34$, $p=0.031$), educational qualification ($\chi^2=19.21$, $p=0.004$), occupation ($\chi^2=17.24$, $p=0.031$), mode of delivery ($\chi^2=18.47$, $p=0.004$), number of children ($\chi^2=17.91$, $p=0.003$), and previous knowledge regarding newborn danger signs ($\chi^2=21.34$, $p=0.001$). No statistically significant association was observed with type of family ($p=0.211$), place of residence ($p=0.514$), or source of previous knowledge ($p=0.078$).

Table no. 1 Demographic Variable of the post-natal Mother n=60

Demographic Variable	Category	Frequency (f)	Percentage (%)
1. Age of the mother	<20 years	10	16.67
	21–25 years	20	33.33
	26–30 years	18	30.00
	>30 years	12	20.00
2. Educational qualification	Illiterate	5	8.33
	Primary	15	25.00
	Secondary	25	41.67
	Graduate and above	15	25.00
3. Occupation	Housewife	30	50.00
	Daily wage	10	16.67
	Private job	10	16.67
	Government job	5	8.33
	Others	5	8.33
4. Type of family	Nuclear	28	46.67
	Joint	22	36.67
	Extended	10	16.67
5. Place of residence	Urban	20	33.33
	Semi-urban	10	16.67
	Rural	30	50.00
6. Mode of delivery	Normal Vaginal	35	58.33
	Cesarean Section	25	41.67
7. Number of children	1	30	50.00
	2	22	36.67
	>2	8	13.33
8. Previous knowledge regarding newborn danger signs	Yes	21	35.00
	No	39	65.00

If Yes, source:	Health worker	3	5.00
	Booklet	3	5.00
	Family/Friends	3	5.00
	Media	11	18.33
	Others	1	1.67

Table 2: Distribution of Knowledge Levels Regarding Danger Signs of Newborn Illness. n=60

Knowledge Level	Score Range	Frequency (f)	Percentage (%)
Excellent Knowledge	25-30	10	16.67
Good Knowledge	17-24	10	16.67
Moderate Knowledge	9-16	15	25.00
Poor Knowledge	0-8	25	41.67
Total		60	100

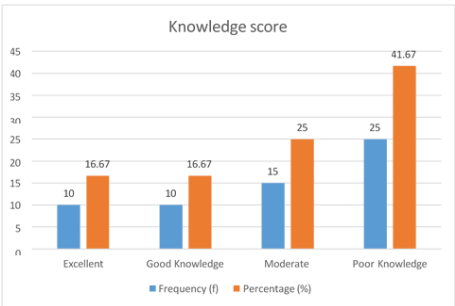


Figure no. 1.- istribution of Knowledge Levels Regarding Danger Signs of Newborn Illness

DISCUSSION

The present study found that the majority of postnatal mothers had poor (41.67%) or moderate (25.00%) knowledge regarding danger signs of newborn illness, indicating inadequate maternal awareness. Significant associations were observed between knowledge and maternal age, educational qualification, occupation, mode of delivery, number of children, and previous knowledge, whereas type of family, place of residence, and source of information showed no significant association.

These findings are consistent with the studies conducted by Tripathi et al.22, Ramasubramanian et al.23, and Kabwijamu et al. 24, which also reported inadequate maternal knowledge regarding neonatal danger signs and highlighted maternal education and previous exposure to health information as important determinants of knowledge. Similarly, Yitayew et al.25 reported that maternal educational status, postnatal care follow-up, and previous knowledge of neonatal danger signs were significantly associated with higher maternal knowledge. These findings emphasize the need for structured health education, counselling, and information booklets during the postnatal period to improve maternal awareness, promote early recognition of neonatal danger signs, and encourage timely healthcare-seeking behaviour.

CONCLUSION

The study concluded that the majority of postnatal mothers had inadequate knowledge regarding danger signs of newborn illness. Maternal age, educational qualification, occupation, mode of delivery, number of children, and previous knowledge were significantly associated with knowledge levels. The findings emphasize the need for structured health education during the postnatal period to improve mothers' awareness regarding neonatal danger signs. Providing simple educational materials, such as information booklets, along with appropriate counselling by healthcare professionals, may promote early recognition of newborn illness, timely healthcare-seeking behaviour, and contribute to reducing neonatal morbidity and mortality.

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