

KNOWLEDGE REGARDING PREVENTION OF NEONATAL HYPOTHERMIA AMONG POSTNATAL MOTHERS IN RURAL WAGHODIA, VADODARA: A COMMUNITY-BASED DESCRIPTIVE STUDY

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ABSTRACT

Neonatal hypothermia is a major contributor to neonatal morbidity and mortality, particularly in rural and resource-limited settings. Maternal knowledge is essential for effective neonatal thermal protection. To assess the knowledge regarding prevention of neonatal hypothermia among postnatal mothers and examine its association with selected demographic variables. A community-based descriptive cross-sectional study was conducted among 150 postnatal mothers in rural villages of Waghodia, Vadodara, Gujarat, India. Participants were selected using convenience sampling. Data were collected using a structured demographic questionnaire and a validated knowledge questionnaire. Data were analyzed using descriptive statistics and chi-square test. Nearly half of the mothers (48.0%) had moderate knowledge, while 26.7% had good knowledge and 25.3% had poor knowledge. Adequate knowledge was observed in early breastfeeding (69.3%) and skin-to-skin contact (65.3%), whereas lower knowledge was noted in maintaining warm room temperature (54.7%). Significant associations were found between knowledge and education ($p = 0.012$), age ($p = 0.019$), and family type ($p = 0.043$). Postnatal mothers demonstrated moderate knowledge regarding neonatal hypothermia prevention. Structured nurse-led educational interventions are necessary to improve maternal knowledge and neonatal health outcomes.

Keywords: Neonatal hypothermia, Maternal knowledge, Newborn care, Thermal protection, Community nursing.

INTRODUCTION

Neonatal hypothermia remains a major global health concern, particularly in developing countries where neonatal mortality rates remain high. The World Health Organization (WHO, 1997) defines neonatal hypothermia as a body temperature below 36.5°C. It is a significant contributor to neonatal morbidity and mortality and increases the risk of infection, respiratory distress, hypoglycemia, and death. Newborns are highly vulnerable due to physiological characteristics such as immature thermoregulatory mechanisms, thin skin, and limited brown fat stores (Datta, 2020). Heat loss occurs through evaporation, conduction, convection, and radiation. Effective preventive strategies include immediate drying, delayed bathing, skin-to-skin contact, early breastfeeding, and maintaining warm environmental conditions (WHO, 1997). Maternal knowledge is essential for implementing these preventive measures. However, in rural communities,

knowledge gaps persist due to limited access to health education (Srivastava *et al.*, 2022). Therefore, assessing maternal knowledge is essential to develop appropriate educational interventions.

MATERIALS AND METHODS

Study Design and Setting

A community-based descriptive cross-sectional design was adopted. The study was conducted in selected rural villages of Waghodia taluka, Vadodara district, Gujarat, India.

Participants and Sampling

The study population comprised postnatal mothers residing in the selected villages. A total of 150 mothers were recruited using non-probability convenience sampling. Inclusion criteria included mothers within the postnatal

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period who were willing to participate and available during data collection.

Data Collection Instruments

Data were collected using two structured tools: Socio-demographic questionnaire (age, religion, education, occupation, family type, parity). Knowledge questionnaire on neonatal hypothermia prevention, consisting of 25 multiple-choice items covering definition, causes, risk factors, mechanisms of heat loss, signs, complications, and preventive practices. Content validity was ensured through expert review. Reliability testing yielded acceptable internal consistency.

Ethical Considerations

Institutional ethical clearance was obtained prior to data collection. Written informed consent was secured from each participant. Confidentiality and anonymity were maintained.

Statistical Analysis

Data were analysed using descriptive statistics (frequency, percentage, mean) and inferential statistics (chi-square

test). A p-value < 0.05 was considered statistically significant.

RESULTS AND DISCUSSION

Section A: Description of Socio-Demographic Variables
Demographic Characteristics: Most mothers (73.3%) were between 21–30 years of age. Most participants were Hindu (81.3%) and housewives (62.7%). Approximately 38.7% had completed higher secondary education, while 17.3% had no formal education. Nuclear families constituted 64% of the sample. All respondents were residents of rural areas Table 1. Nearly half of the participants demonstrated moderate knowledge. While awareness regarding early breastfeeding initiation and skin-to-skin contact was relatively higher, gaps were observed in understanding optimal room temperature maintenance and appropriate timing of newborn bathing. Significant associations were identified between knowledge level and: Age ($\chi^2 = 9.86$, $p = 0.019$), Educational status ($\chi^2 = 16.42$, $p = 0.012$), Family type ($\chi^2 = 6.28$, $p = 0.043$) No statistically significant association was observed with religion, occupation, or parity.

Table 1. Frequency and Percentage Distribution of Postnatal Mothers According to Demographic Variables (N = 150)

S. No	Demographic Variable	Category	Frequency (f)	Percentage (%)
1	Age (years)	Below 20	18	12.0
		21–25	54	36.0
		26–30	56	37.3
		Above 30	22	14.7
2	Religion	Hindu	122	81.3
		Muslim	22	14.7
		Christian	4	2.7
		Others	2	1.3
3	Education	Uneducated	26	17.3
		Higher Secondary	58	38.7
		Graduation	46	30.7
		Post Graduation	20	13.3
4	Occupation	Housewife	94	62.7
		Agriculture	32	21.3
		Business	14	9.3
		Others	10	6.7
5	Area of Residence	Rural	150	100
6	Family Type	Nuclear	96	64.0
		Joint	54	36.0
7	Parity	First child	48	32.0
		2–3 children	78	52.0
		>3 children	24	16.0

Table 2. Level of Knowledge Regarding Prevention of Neonatal Hypothermia.

Knowledge Level	Score Range	Frequency	Percentage
Poor	0–8	38	25.3%
Moderate	9–17	72	48.0%
Good	18–25	40	26.7%
Total		150	100%

DISCUSSION

The present study highlights that although foundational awareness exists among rural postnatal mothers, comprehensive knowledge regarding neonatal thermal protection remains suboptimal. The positive association between educational attainment and knowledge level aligns with previous community-based studies, suggesting that literacy enhances the ability to access, comprehend, and apply health information. Similarly, maternal age demonstrated a significant relationship with knowledge, possibly reflecting experiential learning and repeated exposure to child-care practices. The lower awareness regarding environmental thermal regulation and delayed bathing practices indicates specific content areas that require reinforcement during antenatal and postnatal counselling sessions. Community health nurses play a vital role in delivering culturally appropriate education and demonstrations, particularly in rural settings. Non-probability sampling limits generalizability. Self-reported responses may introduce reporting bias. The study assessed knowledge but did not directly evaluate practice. Future research incorporating observational methods and interventional designs is recommended.

CONCLUSION

This study demonstrates that postnatal mothers in rural Waghodia possess moderate but incomplete knowledge regarding prevention of neonatal hypothermia. Educational status, age, and family structure significantly influence knowledge levels. Strengthening structured maternal education programs during antenatal visits, institutional deliveries, and community outreach initiatives is essential to improve neonatal thermal care and reduce preventable morbidity and mortality.

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CONFLICT OF INTERESTS

The authors declare no conflict of interest

ETHICS APPROVAL

Not applicable

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AI TOOL DECLARATION

The authors declares that no AI and related tools are used to write the scientific content of this manuscript.

DATA AVAILABILITY

Data will be available on request

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