



A DESCRIPTIVE CROSS-SECTIONAL STUDY ON KNOWLEDGE REGARDING NEONATAL HYPOTHERMIA AMONG POSTNATAL MOTHERS IN TEACHING HOSPITAL, BIRGUNJ

Nursing

Chandani Malla	Associate Professor, Department of Pediatric Nursing, National Medical College Nursing Campus, Birgunj, Parsa, Nepal.
Pramila Mahato	Lecturer, Department of Pediatric Nursing, National Medical College Nursing Campus, Birgunj, Parsa, Nepal.
Sabita Rai	Associate Professor, Department of Maternal Health Nursing, National Medical College Nursing Campus, Birgunj, Parsa, Nepal.

ABSTRACT

Background: Neonatal hypothermia is worldwide issue among newborns delivered in both medical facilities and at home, with a particularly high incidence in developing nations (exceeding 90%). While hypothermia itself is not frequently a direct cause of mortality, it significantly contributes to a large number of neonatal deaths across the globe [1]. The current study seeks to determine the knowledge regarding Neonatal hypothermia among postnatal mothers of Tertiary hospital in Birgunj. **Materials and Methods:** A Descriptive cross sectional research design was used. A total of 248 postnatal mothers admitted in postnatal ward of National Medical College were included as samples by using Non probability purposive sampling technique. Data was collected by using semi structured knowledge questionnaire. Data was analyzed by using SPSS version 23 and Chi square was used to find the association between the variables. **Results:** The study results revealed that 47.73% of mothers have inadequate knowledge, 39.39% has moderate knowledge and 12.88% of mothers have adequate knowledge regarding Neonatal hypothermia. The present study reveals that there is significant association between mothers knowledge regarding prevention of neonatal hypothermia and education status, type of family, type of delivery, place of delivery and number of parity at 5% level of significance (i.e. $p < 0.05$). **Conclusion:** Healthy newborn survival is a major priority and maintaining the neutral thermal environment is one of the most influential and cost effective interventions to be practiced to improve newborn health and survival.

KEYWORDS

Knowledge, Neonatal hypothermia, Post natal mothers

INTRODUCTION

The transition from intrauterine to extra uterine life is one of the major challenge for all the newborn babies. The period from birth to 28 days of life is called neonatal period and the babies are called as newborn baby [2].

Hypothermia occurs when the newborns body temperature drops below 36.5°C (97.7°F) as a result of cold environment. The newborn body temperature of $36.0\text{--}36.4^{\circ}\text{C}$ ($96.8\text{--}97.5^{\circ}\text{F}$) is considered as cold stress or mild hypothermia. Body temperature of $32.0\text{--}35.4^{\circ}\text{C}$ ($89.6\text{--}96.6^{\circ}\text{F}$) falls under moderate hypothermia, while a temperature below 32°C (89.6°F) is considered as severe hypothermia [3].

Due to their huge surface area to body mass ratio, reduced subcutaneous fat, immature skin, high body water content, underdeveloped metabolic system, and altered skin blood flow, newborns are vulnerable to rapid heat loss and resulting hypothermia [4]. Hypothermic neonates had a higher risk of developing hypoglycemia, respiratory distress syndrome, jaundice, and even metabolic acidosis [5].

A global review showed the prevalence of newborn hypothermia among hospital setting deliveries in developing countries was 32% to 85% [6]. In South Asian Countries, the high prevalence of newborn hypothermia is reported, in Sri Lanka 63% [7], Pakistan 49% [8], India 43% [9] and Nepal 92.3% [10].

Hypothermia is a newborn risk indication that all mothers or primary caregivers should be aware of. Neonatal morbidity or deaths may be decreased by improving the newborn survival rate through an understanding of and attention to community based hypothermia prevention and management methods. Skin-to-skin contact, early breast feeding, Rooming in, delayed bathing or post ponding newborn bathing, appropriate clothing of the newborn particularly covering of head and extremities are all potential therapies. This behaviour might be facilitated by educating and motivating family members to assist mothers in providing thermo-protection for their infants.

MATERIALS AND METHODS

A descriptive Cross sectional study design was used for the study and the postnatal mothers admitted in Maternity ward of National Medical College and Teaching Hospital in Birgunj were the population. Non probability Purposive sampling technique was used to select 258 postnatal mothers. After getting ethical approval from the IRC-NMCTH (Ref.F-NMC/660/079-080), formal permission was taken from the concerned authority i.e. from the Hospital Director of National Medical College and Teaching Hospital. The research instrument was developed

in English language and local Language. The content validity of research instrument was ascertained by extensive literature search, consultation with subject related experts before data collection. The reliability of the research instrument was calculated by Split half method and was found to be 0.87. Informed written consent was taken from each respondents after explaining the purpose of data collection. Interview method was used by the researcher to collect the information by using semi structured Knowledge questionnaires. Data was collected by researcher herself from 19 May 2024 to 21 July 2024. The data was collected and recorded systematically and was organized in a way that facilitated computer entry.

Statistical Analysis

After collecting data, it was organized for editing, classifying and coding. Statistical Package for Social Sciences (SPSS) version 23 was used for data analysis by using descriptive statistics (frequency, percentage) and inferential statistics i.e. Chi square test was used to find out the association between the mother's level of knowledge regarding prevention of Neonatal hypothermia and demographic variables. The level $p < 0.05$ was considered to be significant.

RESULTS

Table 1: Socio demographic characteristics of respondents n=258

Variables	Frequency	Percentage (%)
Age (in years)		
< 20 years	43	16.67
20- 25 years	94	36.36
26-30 years	84	32.58
Above 30 years	37	14.39
Religion		
Hindu	174	67.42
Muslim	45	17.42
Christian	4	1.52
Other	35	13.64
Educational status		
No formal education	33	12.88
Primary education	104	40.15
Secondary education	72	28.03
Intermediate and above	49	18.94
Occupational status		
Homemaker	149	57.58
Daily wages	21	8.33
Self-business	35	13.64
Service holder	53	20.45

Type of family		
Nuclear	119	46.21
Joint	74	28.78
Extended	65	25.00

Table2: Obstetric related variables of the respondents n=258

Variables	Frequency	Percentage (%)
Type of delivery		
Normal delivery	90	34.85
Cesarean section	154	59.85
Instrumental	14	5.30
Place of delivery		
Hospital	201	78.03
Health post	57	21.97
Number of parity		
One	68	26.52
Two	121	46.97
Three	53	20.45
Four and above	16	6.06

Table 3: Level of knowledge regarding Neonatal hypothermia among Post natal mothers n=258

Level of knowledge	Frequency	Percentage (%)
Inadequate knowledge (<50%)	123	47.73
Moderate knowledge (50- 75%)	102	39.39
Adequate knowledge (> 75%)	33	12.88
Total	258	100%

Table 2 reveals 47.73% of mothers have inadequate knowledge, 39.39% has moderate knowledge and 12.88% of mothers have adequate knowledge regarding Neonatal hypothermia.

Table 3: Association between level of knowledge regarding Neonatal hypothermia among Post natal mothers and selected variables n=258

Variables	Level of knowledge			χ^2	p-value
	Inadequate knowledge	Moderate knowledge	Adequate knowledge		
Age (in years)					
< 25 years	75	47	15	4.68	0.067
≥ 25 years	85	29	7		
Religion					
Hindu	120	36	18	4.74	0.283
Others	45	27	12		
Educational status					
Basic education	91	32	14	7.24	0.034
Secondary and above	37	61	23		
Occupational status					
Home maker	77	55	17	0.76	0.795
Others	53	41	15		
Type of family					
Nuclear	67	41	11	8.62	0.015
Joint and extended	77	53	9		
Type of delivery					
Normal	48	30	12	6.74	0.043
Instrumental and CS	92	59	17		
Place of delivery					
Hospital	114	62	25	5.26	0.031
Health post	24	18	15		
Number of parity					
≤ Two	104	72	13	2.68	0.26
> Two	32	25	12		

Note: S-Significant at 5% level (i.e. $p < 0.05$)

Table 3 represents a significant association between mothers knowledge regarding prevention of neonatal hypothermia and education status, type of family, type of delivery, place of delivery and number of parity at 5% level of significance (i.e. $p < 0.05$).

DISCUSSION

The demographic characteristics of the respondents revealed that 36.36% of the mothers were of age 20-25 years. Majority i.e. 67.42% were Hindu, 40.15% had completed Primary level education, 57.58% of the mothers were homemakers, majority 46.21% lived in nuclear family, 59.85% had delivered baby via Cesarean section, among them 78.03% had delivered in the Hospital and 46.97% had two children.

The study results revealed that 47.73% of mothers have inadequate knowledge, 39.39% has moderate knowledge and 12.88% of mothers

have adequate knowledge regarding Neonatal hypothermia. The study findings are consistent with the study conducted by Shah I (2022) which revealed that 60.2% of the mothers had inadequate knowledge about neonatal hypothermia.¹¹ The study results are similar to the study conducted by Musabyemariya E (2020) which revealed that 60.2% had inadequate knowledge about neonatal hypothermia.¹²

The present study reveals that there is significant association between mothers knowledge regarding prevention of neonatal hypothermia and education status, type of family, type of delivery, place of delivery and number of parity at 5% level of significance (i.e. $p < 0.05$). These findings of the present study are similar with the study findings conducted by Shukla B Nair (2017) which revealed that there is a significant association between the knowledge of the mothers and demographic variables like educational status of the mother and type of family.²

CONCLUSION

According to the study findings, majority of the respondents have lack sufficient understanding about neonatal hypothermia. One of the major cause of neonatal morbidity and mortality among neonates is neonatal hypothermia, which is regarded as the silent killer. It can be easily preventable and manageable too. It can be concluded that in order to effectively care for the newborn, the mother being the primary caregiver, need to be sufficiently informed about neonatal hypothermia and its consequences. This information can be provided during prenatal visits and through various awareness campaigns that can be easily initiated at community level.

Acknowledgement

I am immensely thankful to the National Medical College Teaching Hospital for providing me opportunity to conduct the research and all the participants of the Post natal ward who actively participated in the research study. I express my in-depth thanks towards each and every one who directly and indirectly supported me during the research study.

Ethical Approval: Approved

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

- Yibeltal AY, Endashaw BA, Helina WL, Lubaba OG. Neonatal Hypothermia and Associated Factors among Newborns Admitted in the Neonatal Intensive Care Unit of Dessie Referral Hospital, Amhara Region, Northeast Ethiopia. *International Journal of Pediatrics*. 2020 Sep 14; 2020:3013427. doi: 10.1155/2020/3013427. PMID: PMC7519202 PMID: 33014077. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC7519202/>
- Shukla B, Nair A. Study to assess the knowledge regarding prevention of hypothermia in newborns among postnatal mothers in selected hospital, Jaipur, Rajasthan, India. *Imp J Interdisciplinary Res*. 2017;3 (4):530-2.
- Dutta P. *Pediatric Nursing*. 2nd edition. Allahabad. Jaypee publication; 2004: 222-24.
- CMNRP. Newborn Thermoregulation Self – Learning Module. 2013. http://www.cmnrp.ca/uploads/documents/Newborn_Thermoregulation_SLM_2013_06.pdf.
- Nayeri F, Nili F. Hypothermia at birth and its associated complications in newborn infants: a follow up study. *Iranian Journal of Public Health*. 2006;35(1):48–52. [Google Scholar]
- Zulala NN, Sitaresmi MN, Sulistyaningsih. Vaginal delivery to reduce the risk of hypothermia to newborn. In *AIP Conference Proceedings*; 2017 Aug 4; 1868(1): 090009. DOI Gjooglescholar
- Mullany LC, Katz J, Khattry SK, LeClerq SC, Darmstadt GL, Tielsch JM. Neonatal hypothermia and associated risk factors among newborns of Southern Nepal. *BMC Med*. 2010;8:43. DOI PubMed GoogleScholar
- Darmstadt GL, Kumar V, Yadav R, Singh V, Singh P, Mohanty S, et al. Introduction of community-based skin-to-skin care in rural Uttar Pradesh, India. *J Perinatol*. 2006;26(10):597-604. Retrieved from: DOI PubMed Gjooglescholar Weblink
- Madhvi P, Wickremasinghe R, Jayasooriya KB, Nawarathne NI, Ranaweera R. Mothers' knowledge and practices on thermoregulation of neonates in Sri Lanka. *European International Journal of Applied Science and Technology*. 2014;1(4):55-69. Google Scholar Weblink
- Bhatia A, Srivastava A, Sharma U, Rastogi R. Incidence and risk factors for neonatal hypothermia at presentation. *International Journal of Medical Research Professionals (IJMRP)*. 2017;3(3):175-9.
- Shah I, Paudyal L, Soti H, Gautam. N.S. Descriptive cross-sectional study on mother's knowledge regarding prevention of neonatal hypothermia. *Journal of Universal College of Medical Sciences (2022) Vol.10 No.01 Issue 25.Pp- 62-66*
- Musabyemariya E. Mothers' knowledge and practice regarding neonatal hypothermia at selected Provincial Hospital in Rwanda (Doctoral dissertation, University of Rwanda). *Rwanda Journal of Medical Health Sciences*. 2020;3(2): 152-66.