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Awareness About Neonatal Danger Signs and Bad Child-Rearing Practices among Postnatal Mothers of Perambalur District, Tamilnadu: A Community Based Study

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ABSTRACT

Neonatal danger signs contribute to delayed care-seeking. This cross-sectional study investigates the awareness of neonatal danger signs and bad child-rearing practices among postnatal mothers in Perambalur district, Tamil Nadu. A sample of 245 mothers who gave birth within the last six months was assessed using structured interviews. The results highlight significant gaps in maternal knowledge, particularly regarding harmful traditional practices, underscoring the need for educational interventions to improve neonatal health outcomes. The objective is to determine the awareness and knowledge of neonatal danger signs and bad child-rearing practices among women who gave birth in the last 6 months in a rural area so that appropriate interventions can be done to improve their knowledge. A community-based cross-sectional study was conducted in a primary health center in the Perambalur district from May 2023 to May 2024. Using random sampling, 245 mothers who had given birth in the past six months were recruited. Data were collected using a semi-structured interviewer-administered questionnaire, focusing on sociodemographic factors, neonatal danger signs and harmful child-rearing practices. Data were analysed using SPSS version 16, with Chi-square tests, t-tests and multivariable logistic regression applied to explore relationships between knowledge and sociodemographic variables. Among the 245 mothers, 57.6% had received education up to diploma level or higher and 91.4% were housewives. While all mothers were able to identify at least five neonatal danger signs, 55.5% demonstrated poor knowledge of harmful child-rearing practices. Mothers with higher educational qualifications and those who attended more antenatal and postnatal care visits had significantly better knowledge of neonatal danger signs and safer child-rearing practices. This study reveals notable gaps in maternal knowledge of neonatal danger signs and harmful practices, particularly in less-educated and lower-income groups. Frequent antenatal and postnatal visits were associated with improved maternal knowledge, suggesting that increased healthcare engagement may be crucial in addressing neonatal mortality in rural areas. Public health initiatives should focus on community-based education to address these gaps and enhance maternal knowledge of neonatal care.

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Key Words
Knowledge, neonatal danger signs, bad child-rearing practices, postnatal mothers, tamil nadu

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INTRODUCTION

The neonatal period comprises the first 28 days of the child's life after birth. It is the most vulnerable time for the child's survival because structural and functional changes occur very rapidly during this period[1]. Neonatal death accounts for 38% of all deaths in children younger than 5 years. Globally, 2.4 million children die in the first month of life and approximately 6,500 neonatal deaths occur every day[2-5]. Even after so many advancements in the medical field, the neonatal death rate is still very high in developing countries like India.

In India, approximately 0.75 million neonates die every year[6-8]. The neonatal period is crucial for providing neonates with appropriate care at the onset of illness and any delays in the decision to seek care can have significant consequences. One of the most important causes of neonatal death is the lack of awareness and knowledge about the danger signs in the newborn period among mothers, hence many mothers do not know how to differentiate healthy neonates from sick neonates[9]. Neonatal and Infant mortality rates cannot be decreased without good maternal knowledge regarding neonatal danger signs. It is important for the mothers to recognize the neonatal danger signs and immediately consult the physicians for further management, which will eventually decide the future well-being of sick neonates. Some of the general neonatal danger signs that a mother needs to be aware of are jaundice, convulsions, fast breathing, severe chest indrawing, fever, lethargy, unconsciousness, ear discharge, bulging anterior fontanelle[10-12].

Bad child-rearing practices like prelacteal feeding, applying cow dung to the umbilical cord, blowing air into ear and nose, application of kajal to newborn's eyes, giving gripe water, vasambu orally will predispose to infections, seizures and gastrointestinal problems which are detrimental to the growth of newborn. The behavior of mothers towards neonatal care during illness highly relies on their knowledge about danger signs, yet the amount of awareness has been hardly investigated in rural areas. Early detection and effective management of neonatal ailment represents a key strategy to reduce neonatal mortality.

Objective: The case study was planned with the objective of determining the awareness and knowledge of neonatal danger signs and bad child-rearing practices among women who gave birth in the last 6 months in a rural area, so that appropriate interventions can be done to improve their knowledge.

MATERIALS AND METHODS

Study Design and Participant Characteristics: This was a cross-sectional study conducted in a primary health centre in Perambalur district in Tamilnadu. The study was done from May 2023-May 2024. A random sampling technique was used to interview our participants. Postnatal mothers who had given birth in the previous 6 months and had infants between ages 0-180 days were interviewed.

Sample Size: A review of literature suggests that 20.3% of mothers had correct knowledge of neonatal danger signs. The optimum sample size for the proposed study was calculated assuming the proportion of mothers having correct knowledge of neonatal danger signs as 20%, at 95% confidence interval, 5% allowable error, the minimum sample size required was 245[13].

Sampling Technique: The complete list of postnatal mothers residing in the rural areas of Perambalur were compiled. The study participants were selected by a simple random sampling technique using random number tables until the desired sample size was achieved. Participants were included in the study after obtaining informed consent.

Inclusion Criteria:

- All mothers who gave birth in the previous 6 months and had infants between ages 0-180 days were included.

Exclusion Criteria:

- Mothers who were seriously ill, hospitalized and who changed residence were excluded.
- Mothers who were not willing to give consent were excluded.

Study Tool: Data was collected using a semi-structured interviewer-administered questionnaire. Eliciting the details about sociodemographic profile, details regarding awareness of neonatal danger signs and bad child rearing practices.

Data Collection Procedure: The purpose and details of the study were explained to the subject and informed consent was obtained from the participants. Confidentiality was ensured. Data collection was done by supervisors who were fluent in the local dialect and the questionnaire was checked for completeness everyday.

Data Analysis: The data was checked, coded and entered in Epi info Version 7. Analysis was carried out using SPSS version 16. The baseline data was expressed as Mean and Standard Deviation for continuous variables and proportion for categorical variables and data Proportion by using Chi square test, t test, correlation and multiple regression analysis was done.

RESULTS AND DISCUSSIONS

Sociodemographic Factors among Mothers: A total of 245 mothers were interviewed in the language they were comfortable with during the process of data collection. In this study, 141 (57.6%) mothers were educated till diploma or above, 63 (25.7%) had completed secondary education and 33 (13.5%) had only primary education and 8 (3.3%) had no formal education. All were married and majority of the mothers 224 (91.4%) were housewives. 124 (50.6%) had a single child and 143 (58.4%) of the mothers had a household income above ten thousand rupees (Table 1).

Table 1: Socio-Demographic of Mothers

Parameters	Frequency (%) (N=245)
Age	27.0 ± 4.7
Education	
Primary education	33 (13.5%)
Secondary education	63 (25.7%)
Diploma and above	141 (57.6%)
No formal education	8 (3.3%)
Occupation	
Housewife	224 (91.4%)
Self-employment	4 (1.6%)
Government	8 (3.3%)
Private	9 (3.7%)
Husband Educational status	
Primary education	33 (13.5%)
Secondary education	56 (22.9%)
Diploma and above	144 (58.8%)
No formal education	12 (4.9%)
Husband occupation	
Daily labor	26 (10.6%)
Self-employment	94 (38.4%)
Government	20 (8.2%)
Not employed	1 (0.4%)
Private	104 (42.4%)
Family size	
3	124 (50.6%)
4	103 (42.0%)
5	18 (7.3%)
Average monthly income	
5k-10k	58 (23.7%)
Above 10k	143 (58.4%)
Below 5k	44 (18.0%)

Healthcare Utilization and Postnatal Care among Mothers:

All the mothers in this study had a minimum of 4 antenatal visits. 127 (51.8%) of the mothers were delivered in the Government hospitals. 100% of them breastfed their children. 52 (21.2%) had <three postnatal visits and only 10 (4.1%) had >three postnatal visits (Table 2).

Mother's Knowledge of Neonatal Danger Signs: Mother's knowledge of neonatal danger signs were assessed, considering whether they were able to identify the neonatal danger signs from the list of 11 danger signs given to them. The 11 danger signs considered were jaundice, convulsion, fast breathing, wheezing, severe chest indrawing, fever, lethargy, refusal of feeds, unconsciousness, ear discharge and bulging anterior fontanelle. All the mothers were able to identify a minimum of 5 neonatal danger signs from the list. The knowledge about neonatal danger signs in the interviewed mothers are depicted in Fig. 1.

Table 2: Healthcare Service Utilization and Postnatal Care Related Factors of Mothers.

Parameters	Frequency (%) (N=245)
Parity	
1	123 (50.2%)
2	101 (41.2%)
3	21 (8.6%)
Had ANC	
yes	245 (100.0%)
Number of ANC	
More than 4	245 (100.0%)
Place of Delivery	
Government	127 (51.8%)
Private	118 (48.2%)
Breast feed	
Yes	245 (100.0%)
Had PNC	
Yes	52 (21.2%)
No	193 (78.8%)
Number of PNC	
Above 3	10 (4.1%)
Below 3	42 (17.1%)
Nil	193 (78.8%)
History of neonatal death	
Yes	3 (1.2%)
No	242 (98.8%)

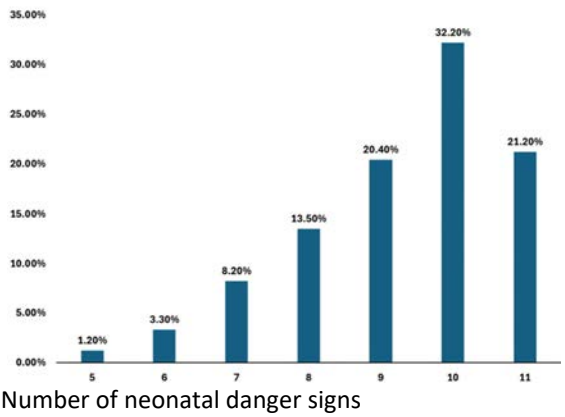

Fig. 1: L The Level of Knowledge about Neonatal Danger Signs among Mothers

Mother's Knowledge on Bad Child-Rearing Practices: Mother's knowledge of bad child rearing practices was assessed by the number of native medications and procedures they followed. If they followed <two they were considered to have good knowledge and if they followed two or more they were considered to have poor knowledge. 109 (44.5%) had good knowledge on bad child rearing practices and 136 (55.5%) had poor knowledge on bad child rearing practices (Table 3). The knowledge about bad child-rearing practices in the interviewed mothers is depicted in Fig. 2. The association between various parameters and the level of knowledge on bad child-rearing practices is shown in table 4.

Table 3: The Level of Knowledge About Bad Child-Rearing Practices among Mothers.

Parameters	Frequency (%) (N=245)
Number of BCRP	
0	51 (20.8%)
1	58 (23.7%)
2	38 (15.5%)
3	48 (19.6%)
4	26 (10.6%)
5	19 (7.8%)
6	3 (1.2%)
7	2 (0.8%)
BCRP	
Good	109 (44.5%)
Poor	136 (55.5%)

Table 4: Determinants of Mothers' Knowledge About Bad Child-Rearing Practices.

	BCRP		
Parameters	Good (N=109)	Poor (N=136)	P-value
Age	26.6 ± 4.6	27.2 ± 4.7	0.28
Education			
Primary education	13 (39.4%)	20 (60.6%)	0.6
Secondary education	25 (39.7%)	38 (60.3%)	
Diploma and above	68 (48.2%)	73 (51.8%)	
No formal education	3 (37.5%)	5 (62.5%)	
Occupation			
Housewife	99 (44.2%)	125 (55.8%)	0.19
Self-employment	0 (0.0%)	4 (100.0%)	
Government	5 (62.5%)	3 (37.5%)	
Private	5 (55.6%)	4 (44.4%)	
Husband educational status			
Primary education	14 (42.4%)	19 (57.6%)	0.37
Secondary education	20 (35.7%)	36 (64.3%)	
Diploma and above	68 (47.2%)	76 (52.8%)	
No formal education	7 (58.3%)	5 (41.7%)	
Husband occupation			
Daily labor	13 (50.0%)	13 (50.0%)	0.8
Self-employment	41 (43.6%)	53 (56.4%)	
Government	9 (45.0%)	11 (55.0%)	
Not employed	1 (100.0%)	0 (0.0%)	
Private	45 (43.3%)	59 (56.7%)	
Family size			
3	65 (52.4%)	59 (47.6%)	0.003
4	42 (40.8%)	61 (59.2%)	
5	2 (11.1%)	16 (88.9%)	
Average monthly income			
5k-10k	21 (36.2%)	37 (63.8%)	0.34
Above 10k	68 (47.6%)	75 (52.4%)	
Below 5k	20 (45.5%)	24 (54.5%)	
Parity			
1	63 (51.2%)	60 (48.8%)	0.002
2	44 (43.6%)	57 (56.4%)	
3	2 (9.5%)	19 (90.5%)	
Number of PNC			
Above 3	5 (50.0%)	5 (50.0%)	0.81
Below 3	17 (40.5%)	25 (59.5%)	
Nil	87 (45.1%)	106 (54.9%)	

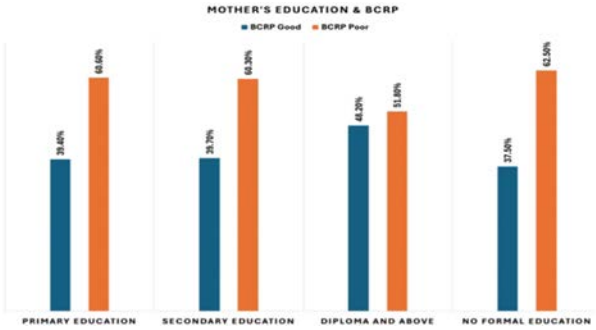

Fig. 2: Mother's Education and Bad Child-Rearing Practices.

Understanding and addressing neonatal danger signs is crucial in reducing neonatal mortality and morbidity. This study aimed to assess the knowledge of mothers on neonatal danger signs and bad child-rearing practices in the rural area of Perambalur. Our results reveal that all participating mothers identified at least five neonatal danger signs, with 20.4% recognizing nine out of eleven. This is notably better compared to studies from neighboring regions; for instance, only 63.8% of mothers in Kerala and 37.36% in Thandalam could identify >three signs and only 24.5% mothers from Nepal and 37% from Saudi Arabia identified more than three signs[14-17].

In this study, the majority of the mothers interviewed were between the age 22-32 years. This finding is similar to studies conducted in Nepal where 66.9% were 20-30 years old and Kerala where most of the mothers were 18 to 39 years old[14,15]. 57.6% of women had attained a diploma or higher education and 91.41% were housewives. This contrasts with findings from Nepal, where only 40.3% of mothers had received education beyond the higher secondary level and from Kerala, where 39.2% had obtained a diploma or higher[14,15]. The higher education levels observed in Perambalur may contribute to the greater awareness among mothers in this region.

50.6% of mothers had only one child and all participants were married. Additionally, all mothers had completed >four antenatal checkups. These results surpass those of studies from neighboring countries like China where 54.5% of mothers had more than one child and only 85.7% were married[18]. In Nepal, 52.5% of mothers had multiple children and only 4.3% had undergone more than four antenatal checkups[14]. In Saudi Arabia, 45% of mothers had more than four children and 87% had completed more than four antenatal checkups[17]. The higher rate of antenatal checkups among mothers in Perambalur likely contributes to their enhanced awareness, distinguishing them from their counterparts in other states and countries.

Traditional practices and beliefs are prevalent in many Indian communities. While some may be grounded in scientific reasoning, many are mere superstitions that contribute to higher neonatal mortality and morbidity. In this study, 44.5% of mothers demonstrated good knowledge of bad child-rearing practices, while 55.5% had poor knowledge. These results are more favorable compared to a study in Nepal, where 82% had poor knowledge and a study in South India, where 14.7% had poor knowledge and 79.7% had average knowledge[14,19].

In this study, only 39% of the mothers with primary and secondary education had good knowledge about

bad child-rearing practices but 48% of the mothers with a diploma or above had good knowledge. These findings show a direct correlation between education and knowledge of bad child-rearing practices. 55.8% of the housewives had poor knowledge, but only 44.4 % working women from the private sector and only 37.5% working women from the government sector had poor knowledge of bad child-rearing practices. These findings depict that there is increased awareness among working women which may be attributed to their educational qualifications and exposure to health care services. 50% of the mothers with more than 3 postnatal visits had good knowledge but only 40.5% of the mothers with less than 3 postnatal visits had good knowledge. This shows the significance of postnatal visits in increasing the awareness of mothers about bad child-rearing practices and their dangerous consequences.

CONCLUSION

This study highlights significant aspects of neonatal care awareness among postnatal mothers in Perambalur District, Tamil Nadu. The findings reveal that while most mothers can identify several neonatal danger signs, gaps remain in their understanding of certain signs and bad child-rearing practices. Specifically, 20.4% of mothers could recognize nine out of eleven danger signs, indicating a commendable level of awareness compared to other regions. However, 55.5% of mothers exhibited poor knowledge of harmful traditional practices, underscoring a need for targeted educational interventions. Educational level and the number of postnatal visits emerged as key determinants of awareness, with higher education correlating with better knowledge of bad child-rearing practices.

Additionally, frequent postnatal visits were associated with improved understanding of both neonatal danger signs and harmful practices. This underscores the importance of both maternal education and regular healthcare visits in improving neonatal care. Given the critical role of maternal knowledge in preventing neonatal morbidity and mortality, public health strategies should focus on enhancing awareness through community-based education programs. These programs should address both the identification of danger signs and the elimination of detrimental traditional practices. Such interventions are vital for reducing neonatal mortality and improving overall child health outcomes in rural areas.

Conflict of Interest: The authors declare that there are no conflicts of interest related to this study. The research was conducted independently and there was no financial support or external influence that could have impacted the study design, data collection, analysis, or interpretation of the results. The authors have no affiliations or financial interests that could be perceived as influencing the outcome of the research.

REFERENCES

1. Lawn, J.E., S. Cousens and J. Zupan, 2005. 4 million neonatal deaths. Lancet., 365: 891-900.
2. Dzakpasu, S., J. Fahey, R.S. Kirby, S.C. Tough and B. Chalmers et al., 2014. Contribution of prepregnancy body mass index and gestational weight gain to caesarean birth in Canada. BMC Pregnancy Childbirth, Vol. 14, No. 1 .10.1186/1471-2393-14-106.
3. Nigatu, S.G., A.G. Worku and A.F. Dadi, 2015. Level of mother's knowledge about neonatal danger signs and associated factors in north west of Ethiopia: A community based study. BMC Res. Notes, Vol. 8, No. 1 .10.1186/s13104-015-1278-6.
4. Adem, N., K.K. Berhe and Y. Tesfay, 2017. Awareness and associated factors towards neonatal danger signs among mothers attending public health institutions of Mekelle City, Tigray, Ethiopia, 2015. Jour Child Adol Beh., Vol. 5, No. 6.
5. Mosalli, R., 2012. Whole body cooling for infants with hypoxic-ischemic encephalopathy. J. Clin. Neonatology, 1: 101-106.
6. Kumar, R.M., D.K. M, D.B. Charumathi and D.T. Jain, 2021. Neonatal danger signs: Knowledge Inmothers of children aged less than 1 year in UAE. [Internet]. European Jour Mole Clin Med., Vol. 0.
7. Baqui, A.H., M. Rahman, K. Zaman, S.E. Arifeen and H.R. Chowdhury,et al., 2007. A population-based study of hospital admission incidence rate and bacterial aetiology of acute lower respiratory infections in children aged less than five years in Bangladesh [Internet]. Journal of health, population, and nutrition. Intern Centre Diarr Dise Rese Bang, 25: 179-188.
8. Kebede, A.A., E.A. Cherkos and E.B. Taye, 2020. Mothers knowledge of neonatal danger signs and health-seeking P: RRN [Internet]. Rese Reports Neona, Vol. 0.
9. Bulto, G.A., D.B. Fekene, B.E. Moti, G.A. Demissie and K.B. Daka, 2019. Knowledge of neonatal danger signs, care seeking practice and associated factors among postpartum mothers at public health facilities in ambo town, central Ethiopia. BMC Res. Notes, Vol. 12, No. 1 .10.1186/s13104-019-4583-7.
10. Pahadi, N.K., S. Chaulagain and S.K.G. Bhattarai, 2024. Awareness and practice regarding neonatal

danger signs among postnatal mothers attending at rural tertiary care centre of Nepal. Int. J. Health Sci. Res., 14: 466-475.

11. Mallick, A.K. and S.S. Kumar, 2020. Mothers knowledge and perception of neonatal danger signs: A cross sectional study. Rese Gate, Vol. 0.
12. Prageetha, K.K., 2021. Mother's knowledge on neonatal danger signs and health seeking behaviour in a tertiary care Hospital, Thandalam, India. Jour Pharm Rese Intern, 30: 64-71.
13. Abu-Shaheen, A., I. AlFayyad, M. Riaz, A. Nofal, A. AlMatary, A. Khan and H. Heena, 2019. Mothers' and caregivers' knowledge and experience of neonatal danger signs: A cross-sectional survey in Saudi Arabia. BioMed Res. Int., 2019: 1-7.
14. Zhou, J., W. Hua, Q. Zheng, Q. Cai, X. Zhang and L. Jiang, 2022. Knowledge about neonatal danger signs and associated factors among mothers of children aged 0–12 months in a rural county, southwest of China: A cross-sectional study. BMC Pregn Childbirth, Vol. 22, No. 1 .10.1186/s12884-022-04592-4.
15. Anupama, D.S., B.S. Nayak and J. Chakrabarty, 2020. Child-rearing practices among migrant mothers of South India: A mixed method study. Clin Epide Global Health, 8: 161-165.