



MOTHERS' KNOWLEDGE AND PERCEPTION OF NEONATAL DANGER SIGNS: A CROSS SECTIONAL STUDY

Pediatrics

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ABSTRACT

India ranks first both in worldwide newborn births and neonatal deaths. India also ranked 12th worst in Infant deaths amongst 52 Low Middle Income Countries. 46% of neonatal and 70% of post-neonatal deaths occur at home, mainly due to delay in identifying danger signs and seeking health care. Aim of study was to assess the knowledge of WHO recognized neonatal danger signs and health care seeking behavior among mothers having babies of age less than one month, through a cross-sectional question based survey. Among the 428 mothers, all knew at least one World Health Organization (WHO) recognized neonatal danger signs. Excessive cry (55.8%), fast breathing (54.7%), jaundice (54.4%), fever (53.7%), chest indrawing (47.4%) and inability to feed (47.2%) were the commonest perceived danger signs. Overall knowledge of danger signs was also good and 63.8% mothers knew more than three danger signs.

KEYWORDS

Neonate, Danger signs, Knowledge, Mother

INTRODUCTION

India is the second largest populous country in the world, with an approximate of 25 million yearly births. This accounts about 20% of global newborn births, which is largest for any country.¹ India also accounts for an estimated 23% of yearly neonatal deaths, which is also largest for any country.¹ As per UNICEF data 2018, out of 2.5 million neonatal deaths in the world, more than six lakh deaths occurred in India.¹ It also ranked 12th worst in Infant deaths amongst 52 Low Middle Income Countries.² Preterm births and low birth weight, neonatal infections, birth asphyxia & birth trauma alone account for 78% of all neonatal deaths in India.³ After the aggressive steps taken by the World Health Organization (WHO), Indian Government, Integrated management of neonatal and childhood illness (IMNCI), facility based newborn care, and various nodal agencies in improving neonatal and child health over the last decade, India's child and neonatal mortality has improved remarkably (Under five mortality 58.3, Infant mortality 45.1 and Neonatal mortality 31 per 1000 live births in 2010 compared to Under five mortality of 36.6, Infant mortality of 30 and Neonatal mortality of 23 per 1000 live births in 2018).^{1,4,5} In spite of all these achievements, India still remains the largest contributor of worldwide neonatal deaths. According to National Family Health Survey-4 (NFHS-4), 46% of neonatal deaths in India occurred at home and 73% of this occurred during the 1st week of neonatal life.⁶ This is mainly because of delay in identifying neonatal danger signs by the care giver and seeking immediate health care.⁷

With this background and assuming that the knowledge of mothers about perception and identification of neonatal danger signs may be lacking, an attempt was made to evaluate the knowledge regarding WHO defined neonatal danger signs and health seeking behavior among mothers of babies below one months of age presenting to pediatric OPD of a service hospital in urban Maharashtra.

MATERIAL AND METHODS

A cross-sectional question based survey was conducted in the pediatric department from mothers having babies less than one month of age, seeking health care from January 2018 to June 2019. All parents belonged to the same socioeconomic status as our hospital being a service hospital. Questions were formulated about knowledge of mothers about the WHO defined neonatal danger signs. A pilot study was conducted among 10 mothers to assess their feasibility in answering the questionnaire. Based on their feedback, the language was changed to make it more user friendly. The responses were entered in excel sheet and analysis was based on simple descriptive statistics with frequency and percentage as applicable. Verbal informed consent was taken from all mothers before enrolling in study. Parents refusing consent were excluded from the study. The study was approved by the institutional ethical committee.

RESULTS

A total of 428 mothers participated in the questionnaire based survey. The mean age of mother was 26.70 years (SD +/- 4.46 Range 18 to 39 years). Single children was seen in 61.5% mothers and more than one children was seen in 38.5% mothers. Educational level of the mothers was good as illustrated in Table 1. On analysis of the maternal knowledge, we observed that their perception of neonatal danger signs was; excessive cry (55.8%), fast breathing (54.7%), jaundice (54.4%), fever (53.7%), chest indrawing (47.4%), inability to feed (47.2%), convulsions (46.7%), diarrhea (43.9%), hypothermia (41.1%), lethargy/ unconsciousness (35.1%), cyanosis (31.5%). All mother knew at least one WHO defined neonatal danger sign. Overall knowledge on perception of danger sign was also good as 63.8% mothers knew more than 3 danger signs. The details are depicted in Table 2.

TABLE – 1: Demographic characteristics of mothers (N = 428)

Baseline characteristics	% (n)
Mean age of mothers in Years (+/- SD)	26.70 (4.46)
No of children	
1 child	61.5% (263)
>1 child	38.5% (165)
Education level	
Upto Secondary level	5.3% (23)
Higher secondary	16.4% (70)
Graduation	39.2% (168)
Post-graduation	39.1% (167)
Occupation	
Working	17.8% (76)
Not-working	82.2% (352)
Family type	
Nuclear	26.4% (113)
Joint	73.6% (315)

Table 2: Mothers response to questions on neonatal danger signs (N = 428)

Neonatal danger signs	% (n)
Excessive cry	55.8%(239)
Fast breathing	54.7%(234)
Jaundice	54.4%(233)
Fever	53.7% (230)
Hypothermia	41.1%(176)
Chest indrawing	47.4%(203)
Inability to feed	47.2%(202)
Convulsions	46.7%(200)
Diarrhea	43.9%(188)

Cyanosis	31.5%(135)
Lethargy/unconsciousness	35.1%(150)
Any one danger sign	100%(428)
More than 3 danger sign	63.8%(273)

DISCUSSION

We conducted this study to analyze the mothers' knowledge and perception of WHO defined neonatal danger signs and health care seeking behavior. In the present study, all mothers knew at least one neonatal danger signs. This is contradictory to previous studies where maternal knowledge for at least one danger sign was much less.^{8,9} This may be attributed to the cause that our clientele had better formal education and awareness as compared to previous studies.^{9,10} Awasthi et al observed that more than half of care givers recognized fever, irritability, weakness, slow breathing and diarrhea as danger signs in neonates.⁹ The rather well known danger signs like poor sucking, rapid breathing lethargy/ unconsciousness were perceived as less severe danger signs. In our population the identification of these well-known danger sign by the mothers was good.

The health seeking behavior was also good as all mothers reported that the sick newborn child should be immediately seen by a doctor. This is again contradictory to previous studies where the health seeking behavior was much less.^{8,9,10} Dongre et al in their study observed that only 42% of newborns with danger signs got medical attention.⁸ Bhandari et al reported that only 40% of sick newborns got medical attention.¹⁰ Kaushal et al in their study reported that the health care seeking behavior of parents to a hospital or qualified medical practitioner was only 33%, because of distant location, long queues, and impolite and callous behavior of the staff in government hospitals.¹¹ The various barriers about the gap in knowledge and health seeking behavior among the care givers as perceived by various authors were ignorance in parents, low socio-economic status, lack of education, faith in supernatural causes and non-availability of affordable health care facility.^{8,9,10} Good knowledge and health seeking behavior among mothers in our population may be attributed to their good educational background with easy accessibility to an affordable health care facility, as ours being a service hospital.

Improving the formal education of parents, making the health care facility easily accessible and affordable, educating the care givers in identifying early neonatal danger signs and seeking immediate health care are important milestones to be addressed to achieve the proposed Sustainable Development Goal to reduce neonatal mortality to less than 12 per 1000 live births by 2030.

Our study has few limitations. Our study had a smaller sample size, owing to our limited clientele. Since our study catered to a selected section of clientele, the results may not be generalized to the community. But we hope this study to be an inspiration for larger scale community based study in the near future.

CONCLUSIONS

Maternal knowledge about perception of neonatal danger signs was good.

REFERENCES

1. UNICEF, WHO, World Bank, UN Population Division. Levels and trends in child mortality report 2019 (estimates developed by the UN inter-agency group for child mortality estimation). World Health Organization, 2019. Available from: https://www.who.int/maternal_child_adolescent/documents/levels_trends_child_mortality_2019/en/ (accessed May 14, 2020).
2. UNICEF, WHO, World Bank, UN Population Division. Levels and trends in child mortality report 2017 (estimates developed by the UN inter-agency group for child mortality estimation). World Health Organization, 2017. Available from: https://www.who.int/maternal_child_adolescent/documents/levels_trends_child_mortality_2017/en/ (accessed May 14, 2020).
3. Million Death Study Collaborators, Bassani DG, Kumar R, Awasthi S, Morris SK, Paul VK, Shet A, Ram U, Gaffey MF, Black RE, Jha P. Causes of neonatal and child mortality in India: a nationally representative mortality survey. *Lancet*. 2010 Nov 27; 376 (9755):1853-60.
4. UNICEF, WHO, World Bank, UN Population Division. Levels and trends in child mortality report 2011 (estimates developed by the UN inter-agency group for child mortality estimation). World Health Organization, 2011. Available from: <https://data.unicef.org/resources/levels-and-trends-in-child-mortality-report-2011/> (accessed May 14, 2020).
5. Government of India, Ministry of Health & Family Welfare. Integrated Management of Neonatal and Childhood Illness: training modules for Medical officers. New Delhi; 2005
6. National family health survey (NFHS-4) 2012-14 [Internet]. Mumbai: International Institute for Population Sciences (IIPS) and Macro International; 2009. Available from: <http://www.rchiips.org/nfhs/nfhs4.shtml> (accessed May 14, 2020).
7. Bhutta ZA, Darmstadt GL, Hasan BS, Haws RA. Community based interventions for improving perinatal and neonatal health outcomes in developing countries: a review of the evidence. *Pediatrics* 2005;

8. Dongre AR, Deshmukh PR, Garg BS. Awareness and health care seeking for newborn danger signs among mothers in peri-urban Wardha. *Indian J Pediatr*. 2009 Jul;76(7):691-3.
9. Awasthi S, Verma T, Agarwal M. Danger signs of neonatal illnesses: perceptions of caregivers and health workers in northern India. *Bull World Health Organ*. 2006;84(10):819-826.
10. Bhandari N, Bahl R, Taneja S, Martinez J, Bhan MK. Pathways to infant mortality in urban slums of Delhi, India: implications for improving the quality of community and hospital based programmes. *J Health Pop Nutr* 2002; 20: 148-155.
11. Kaushal M, Aggarwal R, Singal A, et al. Breastfeeding practices and health-seeking behavior for neonatal sickness in a rural community. *Journal of Tropical Pediatrics*. 2005 Dec;51(6):366-376.