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Original Research Article

Knowledge of danger signs in neonates among postnatal mothers of babies admitted in tertiary care neonatal intensive care unit in a two-tier town in South India

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ABSTRACT

Background: Neonatal period is the first 28 days of life. Neonatal period is highly vulnerable and has high risk of mortality at an average global rate of 17/1000. Neonatal illnesses present with non-specific symptoms and signs. Neonatal danger signs signify common signs of severe illness. Aim of the study was to assess the awareness of postnatal mothers about danger signs in neonates and the associated factors.
Methods: Facility based cross sectional study conducted at a tertiary care hospital in a two-tier town in South India. Source of population was postnatal mothers of babies who were admitted in NICU. A structured questionnaire was used to collect the data through face-to-face interview. Neonatal danger signs are signs that sick neonates show as stated by WHO, which includes- not able to feed, or stopped feeding well, convulsed or fitted since birth, fast breathing, chest in drawing, fever, cold to touch, yellow palms and soles, umbilical redness, or draining of pus, skin boils, or eyes draining pus, no or minimal movement when stimulated. Mothers who mentioned at least 3 are considered to have good knowledge.
Results: Commonly mentioned danger signs are fever (89%), chest indrawing (59%), poor feeding (51%), and umbilical redness (48%). Mothers who had good knowledge was 32% of which 75.9% had counselling on danger signs during antenatal visits, 78% had antenatal visits more than 4,86.9% had post-natal care or visits,51.56% had education above secondary school.
Conclusions: Mothers need counselling on neonatal danger signs during antenatal and post-natal visits to reduce neonatal mortality.

Keywords: Neonatal danger signs, Knowledge, Mothers

INTRODUCTION

The neonatal period is the first 28 days of life. The Neonatal period is highly vulnerable and has high risk of mortality at an average global rate of 17/1000. According to recent Global statistics, 2.4 million children die in the neonatal period.[1] Even though there has been a declining trend in the recent years, the neonatal death rate is still remarkable in India. According to NFHS5 in India, neonatal mortality is 19.9/1000 live births and under five mortality is 35.2/1000 live births.[2] Neonatal mortality remains a challenging issue as seen from the above statistics. It contributes to a major part of under 5 mortality.

In India, leading causes of neonatal death are prematurity, neonatal infections, birth asphyxia, congenital malformations. Neonatal illnesses present with non-specific symptoms and signs. Neonatal danger signs

signify common signs of severe illness. Globally, UNICEF is focused on every child life alive, a signature neonatal campaign that supports and accelerates UNICEF India's efforts to eliminate preventable neonatal deaths by 2030. UNICEF's focus on equitable reduction of neonatal deaths is in line with the government of India's India new born action plan.

The action plan was to significantly reduce preventable new born deaths and bring down neonatal mortality to a single digit by 2030. Community interventions ensure the continuum of care with follow up home-based new born care visits by health workers known as ASHA workers.

Aim of the study was to assess the awareness of postnatal mothers about danger signs in neonates and the associated factors.

METHODS

Study design, period, setting

Facility based cross sectional study was conducted at RICH hospital, a tertiary care hospital in a two-tier town in South India from 1 December 2020 to 28 February 2021.

Population

The source of the population was postnatal mothers of babies who were admitted to NICU in tertiary care hospital in a two-tier town in South India

Data collection

The data was collected using a structured questionnaire through face-to-face interview. The questionnaire was translated to the local language.

Inclusion criteria

Mothers of all neonates admitted during the study period were included.

Operational definitions

Neonatal danger signs are signs that sick neonates show as stated by world health organization (WHO), which include not able to feed, or stopped feeding well, convulsed or fitted since birth, fast breathing, chest in drawing, fever, cold to touch, yellow palms and soles, umbilical redness, or draining of pus, skin boils, or eyes draining pus, no or minimal movement when stimulated.[3] Mothers who mentioned at least 3 are considered to have good knowledge (validated score).[4]

Statistical analysis

Data was analysed using PSPP version 2.1. The socio-demographic characteristics were described using percentages and frequencies.

RESULTS

Socio-demographic characteristics of the 262 women are described in Table 1. The majority belonged to the age group 18-24 years (50.38%). 69.08% had a secondary education level and above. 58.39% were from urban areas. All the respondents had at least one antenatal visit and 71.75% of them had four or more antenatal visits, but only 27.86% of them had counselling about neonatal danger signs during antenatal visits. The majority had delivered at a health facility (90%). Most (92%) of them had post-natal visits (home or hospital visits).

Table 1: Sociodemographic distribution of mothers and maternal health care services utilisation (N=262).

Variables	Frequency	Percentage (%)
Age (years)		
18-24	132	50.38
25-35	79	30.15
>35	51	19.47
Education		
Illiterate	29	11.06
Primary	52	19.84
Secondary and above	181	69.08
Employment		
Homemaker	143	54.58
Working women	119	45.41
Residence		
Rural	109	41.61
Urban	153	58.39
Parity		
Primigravida	149	56.87
Multigravida	113	43.13
Antenatal care		
Yes	262	100
No	0	0
Antenatal visits		
<4	84	32.06
4 and more	188	71.75
Health education on danger signs		
Yes	73	27.86
No	189	72.13
Place of delivery		
Home	26	9.92
Hospital	236	90.07
Postnatal visits		
Yes	242	92.36
No	20	7.63

Participants knowledge on danger signs depicted in (Table 2).

A total 81% had knowledge about at least one danger sign. Only 32% had answered three or more danger signs.

Table 2: Maternal knowledge on neonatal danger signs.

Danger signs	Yes	Frequency (%)
Not feeding well or stopped feeding	134	51
Fever	234	89
Convulsions	60	23
Yellow soles	34	13
Moves only when stimulated or not moving	71	27
Percent umbilical redness	126	48
Fast breathing	82	31
Chest indrawing	155	59
Cold to touch	31	12
Not mentioned any	29	11

Table 3: Distribution of good knowledge (N=83).

Variables	Frequency of good knowledge	Percentage of good knowledge (%)
Age (years)		
18-24	51	42.33
25-35	22	18.26
>35	10	12.04
Education		
Illiterate	8	1.85
Primary	13	10.79
Secondary and above	62	51.56
Employment		
Homemaker	20	24.10
Working women	63	75.90
Residence		
Rural	34	40.96
Urban	49	59.04
Parity		
Primigravida	39	46.98
Multigravida	44	53.02
Antenatal care		
Yes	83	100
No	0	0
Antenatal visits		
<4	18	21.69
4 and more	65	78.31
Health education on danger signs		
Yes	63	75.9
No	20	24.1
Place of delivery		
Home	7	8.43
Hospital	76	91.57
Postnatal visits		
Yes	72	86.74
No	11	13.26

Commonly mentioned danger signs are fever (89%), chest indrawing (59%), poor feeding (51%), and umbilical redness (48%). Mothers who had good knowledge was 32%, of which 75.9% had counselling on danger signs during antenatal visits, 78% had antenatal visits more than 4,86.9% had postnatal care or visits, 51.56% had education above secondary school (Table 3).

DISCUSSION

Maternal knowledge about neonatal danger signs is essential in early recognition of severe neonatal illnesses and therefore, early care seeking which can reduce neonatal mortality. In our study, even though majority were aware of minimum one danger sign lacked good knowledge which is essential for reducing neonatal deaths. This finding is consistent with other studies done in different settings.[5-8] Abdulrida et al assessed knowledge about danger signs in neonates and health-seeking practices of mothers attending (N=275) PHCCs in Bagdad (Iraq). Abdulrida et al reported that mothers of all the study participants mentioned correctly at least one danger sign.[8] Similarly, a study done by Salem et al among women (N=372) living in Ambanja, Madagascar revealed high proportion of knowledge of one danger sign.[7] Contrary to our findings, low proportions of mothers' knowledge of at least one danger sign was reported in other studies conducted in Ethiopia, Uganda, and Nigeria have reported.[9-12]

In present study, only 32% of mothers reported at least three danger signs. This was lower than the proportion reported (81%) in Iraq by Abdulrida et al.[8] However, our findings were better than those of the proportions (almost two times) reported from Ethiopia (18.2%) by Nigatu et al and from Kenya (15.5%) by Kibaru et al but the proportion of women with knowledge of at least three danger signs is higher than that reported by others.[7,12-15]

Our study found that mothers who had counselling regarding neonatal danger signs during their antenatal visits had better knowledge (75.9%).

Limitations

Despite the response being 100% there may be recall bias and larger sample may be required to generalise the results.

CONCLUSION

The need for creating awareness among mothers about danger signs in new born is obvious as the knowledge among the mothers was found to be limited. Strategies like counselling, educating mother during antenatal visits and immediate post-natal period must be emphasized. Health care personnel including grassroot level like ASHA (Accredited Social Health Activist) and ANM (Auxillary Nurse Midwife) should be trained to compulsorily impart knowledge about neonatal danger signs and early care

seeking behaviour in mothers at community level and also during hospital visits.

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