Knowledge about neonatal jaundice among Nepalese mothers

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Abstract

Introduction: Neonatal Jaundice (NNJ) is an important contributor to the high neonatal morbidity and mortality in Nepal.

Objectives: To assess the knowledge among mothers about NNJ.

Method: A descriptive cross-sectional study was carried out among 177 mothers in Sunakothi, Lalitpur, a village in Kathmandu valley, with an interview schedule and convenient sampling technique.

Results: Of the 177 mothers, 57.1% were in the 26-30 year age group, 98.7% had at least four antenatal visits, 81.6% were Hindus, 50.6% were educated up to class eleven and 42.9% were housewives. Around 50% of mothers had a low level of knowledge (score <50%), 28.6% had moderate level of knowledge (score 50-75%) and 22% had adequate level of knowledge (score >75%) regarding NNJ. Whilst 84% of mothers believed that the danger sign of NNJ was inability to feed the baby, 11% of mothers believed that mental retardation and death were complications of NNJ. A few mothers (12%) were aware about the cause of NNJ. Around 74% mothers believed that exposing the baby to sunlight is the home management of NNJ but only 2% had heard about phototherapy. Whilst knowledge about NNJ had a statistically significant relationship with maternal education, there was no statistically significant relationship with age, occupation or parity.

Conclusions: This study shows that the mothers in Sunakothi, Lalitpur village in Kathmandu valley, Nepal had a poor knowledge about the causes, danger signs, complications and treatment of NNJ.

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(Key words: Knowledge, neonatal jaundice, Nepal)

Introduction

Around 50% term and 80% preterm infants develop jaundice 2-4 days after birth[1]. Most of this newborn hyperbilirubinaemia resolves by the first week of life with liver maturation[2]. Hyperbilirubinemia is an important cause of morbidity in the first week of life[3]. However, correct use of phototherapy and blood exchange to control the serum bilirubin level, can prevent complications[2]. Mother's lack of knowledge or the use potentially harmful child-rearing practices can retard the growth and development of some infants[4,5]. Mothers require knowledge about baby care, childhood diseases, immunizations, and infant feeding, during the postpartum period[6,7]. In Nepal, a study conducted at Kanti Bal Hospital reported that 94.5% of the babies with neonatal jaundice (NNJ) were cured and 5.5% died[3]. A study conducted in Myanmar reported that NNJ was the chief cause of neonatal morbidity and mortality and was responsible for 46% of hospital admission of neonates in the country[8].

In 2015, a cross sectional study was carried out in Islamabad among 200 respondents to assess the knowledge of mothers regarding NNJ. The study showed that 52.5% mothers had inadequate score while 47.5% mothers had an adequate knowledge score[9]. A study conducted in Nigeria among 350 mothers found that 34% of the mothers had knowledge about a complication of NNJ namely brain damage (kernicterus). About 58% mothers accepted that exposing the babies to sunlight could prevent the condition. This study concluded that knowledge about NNJ was low and utilization of preventive practices were ineffective[10]. Another study conducted in Nigeria showed that about 92.4% mothers were aware of NNJ, 67% admitted their jaundiced babies to hospital, 19.4% followed the traditional medication, and 13.2% mothers neither took their neonates to hospital nor followed any traditional medication. The study revealed that there is a knowledge gap in mothers of babies with NNJ[11]. A study conducted by Adebami[12] showed that 217 (63.5%) mothers had appropriate knowledge whilst 215 (36.5%) mothers had no knowledge about NNJ. This study also showed that

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the knowledge of NNJ was better with increased parity, maternal age and maternal social class, and attendance of antenatal care. In 2015, a study conducted in Lucknow, India among 240 mothers to assess the knowledge of mothers with children aged 0-23 months regarding NNJ revealed that the mothers had inadequate knowledge about NNJ. In this study, about 80% of mothers had heard about NNJ and about 68.7% mothers thought fever is the danger sign of NNJ[13]. We are not aware of any study that appraised Nepalese mothers' knowledge and practice about NNJ.

Objectives

To assess knowledge among Nepalese mothers toward NNJ that may lead to delay in presentation and inappropriate management of severe hyperbilirubinemia.

Method

A descriptive cross-sectional study was carried out in Sunakothi, Lalitpur, a village in Kathmandu valley. The mothers who had a child less than two years old and both primi and multi parous mothers were included in the study. The mothers who had a sick and unstable child and mothers with twin babies were excluded.

Data was obtained by using a structured questionnaire through the interview method. The questionnaire was developed by the author through an extensive review of the literature and by consulting those with subject expertise. Educational midwives again reviewed the draft questionnaire and then the tool was pretested. The reliability of the questionnaire, done by split-half technique, was 0.78. The demographic information was collected using a simple self-designed questionnaire, including the age, educational status, occupation, ethnicity etc. There were 15 questions with a single choice, 10 related to knowledge and 5 related to practice with regards to the management of NNJ. Each item was scored as 1 = correct answer (best one) and 0= wrong answer and no answer. The highest possible score was 15 (100%), and knowledge and practice levels were categorized as low (< 50%), moderate (50–75%), and adequate (> 75%).

The data obtained was analysed using SPSS version 17. Ethics approval was obtained from the ethics review committee of Asian College for Advance Studies. The purpose of the study was made clear to each respondent and written informed consent was obtained. Participants were informed that they were free to withdraw any time without reason and assured that the data would be kept private and confidential.

Results

Table 1 represents the demographic characteristic of the respondents.

Table 1
Demographic characteristic of the respondents (n=177)

Category	Number (%)
Age group (years)	
<20	09 (05)
20-24	32 (18)
25-30	101 (57)
31-35	35 (29)
Religion	
Hindu	145 (82)
Muslim	05 (03)
Buddhist	18 (10)
Christian	09 (05)
Occupation	
House wife	76 (43)
Job	74 (42)
Student	18 (10)
Agriculture	09 (05)
Caste	
Janajati	121 (69)
Chhetri	35 (20)
Brahmin	14 (08)
Dalit	07 (04)
Education	
Illiterate	05 (07)
Primary(1-4 Class)	09 (12)
Secondary (5-10 class)	24 (31)
College (above 10 class)	39 (51)
Antenatal clinic visit	
Yes	175 (99)
No	02 (01)
Parity	
Primiparous	97 (55)
Multiparous	80 (45)

Table 2 shows the level of knowledge about NNJ among the respondents.

Table 2
Level of knowledge about neonatal jaundice (NNJ) among respondents (n=177)

Level of knowledge about NNJ	*n* (%)
Low (<50%)	51 (29)
Moderate (50-75%)	87 (49)
Adequate (>75%)	39 (22)

Table 3 shows the results of the assessment of maternal knowledge regarding NNJ.

Table 3: ***Knowledge and practice of participants about neonatal jaundice (n=177)***

Category	Number (%)
Definition of neonatal jaundice (NNJ)	
Yellowness of the eyes	154 (87)
Redness of the eyes	14 (08)
Infection of the skin	09 (05)
Common problem in newborn	
Yes	172 (97)
No	05 (03)
Foods taken by mothers can cause NNJ	
Yes	154 (87)
No	23 (13)
NNJ usually appears between	
2-3 days after birth	83 (47)
Don't know	46 (26)
7-8 days after birth	35 (20)
5-6 days after birth	14 (08)
Causes of NNJ	
Don't know	131 (74)
Infection	21 (12)
Blood incompatibility	17 (10)
Prematurity	08 (05)
Part of the body where jaundice is first noticed	
Eyes	140 (79)
Face	14 (08)
All over the body	12 (07)
Hands and feet	12 (07)
Treatment of NNJ	
Herbal medications	134 (76)
Consult the Doctor	25 (14)
Phototherapy	16 (09)
Exchange transfusion	02 (01)
Signs and symptoms seen in baby while baby was having NNJ	
Refusal of feeds	149 (84)
High-pitched cry	124 (70)
High grade Fever	81 (46)
Don't know	76 (43)
Effects of NNJ	
Liver damage	140 (79)
Brain damage	18 (10)
Mental retardation	16 (09)
Death	03 (02)
Early management of NNJ	
Avoid oil massage to the baby.	168 (95)
Exposing to sunlight early in the morning	154 (87)
Taking the baby to hospital	21 (12)
Don't know	05 (03)
NNJ treatment practices	
Put baby in the sun	131 (74)
Give herbs	21 (12)
Hospital treatment	12 (07)
Give sugar water	09 (06)
None	05 (03)
Do you believe in traditional practice about NNJ?	
Yes	177(100)
No	0 (0)
If yes, what did you do?	
Exposure to sunlight	154 (87)
Herbal medicine	138 (78)
Restrict oil massage	115 (65)
Nothing	71 (40)
Feeding during first 3 days	
Exclusively breastfed	168 (95)
Breast and formula	02 (01)
Breast milk and sugar water	07 (04)
Restrictions followed by the mother	
Avoiding food containing turmeric	53 (30)
Have only milk and rice	46 (26)
Avoiding meat and meat products	41 (23)
No need of any restriction	37 (21)
Willingness to take baby to hospital	
Yes	138 (78)
No	39 (22)

Among the 177 respondents 87% correctly identified jaundice as yellowish discolouration of the eyes and 97% knew that jaundice is common in the newborn. Around half of respondents knew that physiological jaundice occurs in 2-3 days in the newborn baby, but over two thirds could not identify any cause of jaundice. Whilst 79% mothers correctly identified that jaundice was first noticed in eyes, 76% believed that treatment was mainly by exposing in sunlight and only 1% respondents knew that the correct form of treatment of NNJ was phototherapy. With regards to recognizing the signs and symptoms in infant affected with NNJ, 84% mothers answered that the infant refused to feed, 70% replied about high pitched cry and 46% answered about high grade fever. About the effect of NNJ, only 10% respondents were aware about possible brain damage.

Nepal is a predominantly rural country, where newborn care practices in the home are rudimentary, and some of them are harmful[14]. Traditional beliefs and practices in NNJ for the baby were avoiding oil massage, giving herbal medicine and exposing to sunlight and for mothers were to restrict certain food in her diet such as meat and meat products, certain vegetables and food contain turmeric. About the assessment of maternal practices related to NNJ, 95% respondents avoid oil massage to the baby and 87% practise exposing babies to sunlight in the early morning as early management of NNJ. Almost all the mothers (95%) exclusively breastfed during the first 3 days after delivery. The traditional practice of giving herbal medicine in NNJ was acceptable to over two-thirds of the respondents. Traditional practice of restricting certain foods in the mother's diet while the baby had jaundice was followed by 21% respondents. A majority (78%), of the respondents were willing to obtain treatment for the baby from hospital.

Maternal knowledge about NNJ was significantly associated with education ($\chi2 = 13.71$, $p=0.04$), but not with maternal age ($\chi2=0.24$, $p=0.88$), occupation ($\chi2 =0.64$, $p = 0.73$) or parity ($\chi2 =0.72$, $p = 0.62$).

Discussion

Adequate maternal knowledge, early perception, and care seeking behaviour are fundamental components of effective management of NNJ[15]. In this study, only 22% of mothers had an adequate level of knowledge about NNJ whereas a study conducted in Egypt showed that 52.3% of participants had adequate knowledge about NNJ[16]. The majority (87%) of respondents knew that NNJ was yellowness of the eyes and 79% of the mothers correctly indicated the eyes as the part of the body where jaundice is first noticed. This finding supported previous studies[10,17,19]. The knowledge of the causes of NNJ was low as 74% of the mothers did not know of any cause. This finding was similar to those in Iran and Nigeria[10,17,19]. In this study around half (47%) of mothers knew that NNJ usually appears between 2 and 7 days after birth. Regarding the knowledge of danger signs, 84% of respondents knew that refusal of feeds by the newborn was a danger sign. This finding was similar to that in Nigeria[10]. A large proportion of mothers (79%) had a low knowledge about the effect of jaundice. In contrast, a study conducted in Malaysia found that 70% of mothers knew that jaundice could cause death and brain damage[20]. In our study, only 9% of respondents were aware of phototherapy as a standard treatment for NNJ. A study conducted in Sri Lanka found that 44% of respondents were aware of phototherapy as a standard treatment for NNJ[21]. Regarding willingness to take the baby to the hospital if the baby developed NNJ, 78% of respondents were willing. A study conducted by Goodman[10] shows that 90.4% of respondents had willingness to take the baby to hospital. Majority of respondents (74%) in this study would expose their newborns to sunlight as a treatment practice for NNJ. In sub-Saharan Africa also, exposure of newborn with jaundice to sunlight was a common practice[11,22]. The traditional practice about NNJ in Nepal was to expose the newborn to sunlight (87%) and use herbal medicine (78%) which was similar to the study in Vietnam[23]. About 30% mothers avoid food containing turmeric while their baby had jaundice. Maternal education helps mothers cope with new situations while caring for their infants[24]. This study found that maternal education was significantly associated with knowledge of NNJ. This finding supports the previous studies conducted by Amirshaghaghi and Boo[18,20].

In this study, there were several limitations. This study was conducted in a small community with mothers who have children less than two years old due to time and personnel constraints. Therefore, a replication of the study should be conducted in different communities and different geographic areas with a larger population of postnatal mothers. The small sample size in our study limits our ability to draw conclusions about the level of maternal knowledge on NNJ among mothers in Nepal. The questionnaire was newly-developed for this study so it needs to be used in various studies in different counties, especially in developing countries. Future studies should be conducted with a larger sample size, including different health centres and communities, and long-term follow-up care should be arranged.

Conclusions

This study shows that the mothers in Sunakothi, Lalitpur village in Kathmandu valley, Nepal had a poor knowledge about the causes, danger signs, complications and treatment of NNJ.

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