

# Knowledge attitude and practice of neonatal care among postnatal mothers

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## Abstract

The present study was designed to assess the knowledge and attitude of neonatal care practices among postnatal mothers in a tertiary care hospital. This descriptive study was carried out in the Neonatal Division, Department of Pediatrics of a tertiary care hospital in South India during April – July 2009. The data was collected from 100 postnatal mothers by trained interviewers using a structured proforma. In addition to demographic data, mothers were also asked about their knowledge on and attitude towards neonatal care and the practices they follow. Scoring of the responses to questions was done and the data was analyzed using SPSS Ver.13. Knowledge of mothers was inadequate in areas of umbilical cord care (35%), thermal care (76%) and vaccine preventable diseases. Nineteen percentage of them still practice oil instillation into nostrils of newborns and 61% of them administer gripe water to their babies. This study indicates that awareness and attitude of postnatal mothers towards neonatal care has lots of lacunae especially in those who belong to the lower socio-economic status. There is scope for improvement by providing better care and health education for antenatal mothers.

Key words: Neonatal care, Postnatal mothers, Knowledge-Attitude-Practice (KAP)

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## Introduction

The newborn health challenge faced by India is more formidable than that experienced by any other country in the world. It is estimated that out of 3.9 million neonatal deaths that occur worldwide, almost 30% occur in India [1]. Global under-five mortality rates have declined over the past four decades, but the neonatal mortality rates still remains high [2]. Although the neonatal mortality rate (NMR) shows a decreasing trend, compared to 25% reduction in the neonatal deaths in 1980s the decline in 1990s was only 15 % [3]. Irrespective of urban-rural differences in NMR, neonatal deaths are a bane of the poorest. The major causes of neonatal deaths globally were estimated to be complications of prematurity (28%), sepsis and pneumonia (26%), birth asphyxia and injuries (23%), tetanus (7%), congenital anomalies (7%) and diarrhea (3%) [2,4]. A recent study done by Baqui et al (2006) in rural Uttar Pradesh showed that out of 618 neonatal deaths, 32% deaths were on the day of birth, 50% occurred during the first 3 days of life and 71% were during the first week [5]. Despite a plethora of health institutions, over 50% births amongst the urban poor continue to occur in home settings and under the supervision of untrained birth attendants [6].

Care practices immediately after delivery play a major role in causing neonatal morbidities and mortalities. Essential new born care practices were outlined to decrease the neonatal morbidity and mortalities [7-9]. These practices include clean cord care, thermal care, and initiating breastfeeding immediately after birth (within 1 hour). The traditional practices like applying cow dung on the umbilical stump, oil instillation into nose etc also contribute to newborn's risk of morbidity and mortality. The purpose of this study is to assess the correct knowledge, attitude and practice of postnatal mothers regarding the newborn care.

## Material and Methods

This descriptive study was carried out in the Division of Neonatology of our tertiary referral center. Every 40th postnatal mother delivered between May to August 2009 were included for the study. Postnatal mothers who had lost their babies and sick mothers were excluded from the study. Data was collected by trained investigators using a

standard questionnaire that was read out to the postnatal mothers. Informed consent was obtained from all the mothers interviewed. Socio demographic information such as age, level of education, occupation, place of residence, type of family, family income etc were recorded. Scoring of the responses to questions was done in the following manner, a score of two for the correct response, one for a partially correct response and zero for a wrong response. The total score was calculated and data was analyzed using Statistical Package for Social Sciences (SPSS) Version 13.0.

## Results

A total of 100 postnatal mothers were included in the study. Maternal age ranged between 18 to 35 with an average of  $25.18 \pm 3.8$ . Among them 29 % of the mothers had only completed primary school or less and 22% were graduates. Only 33% of them were employed. Most of the mothers (37%) belonged to families which had a per capita income ranging from 500 to 1000 rupees. Almost half of the mothers hailed from joint families and 42% of the mothers were primipara. Normal vaginal delivery was recorded in 67% and Caesarean section in 28% of them. The responses of the mothers when they were asked about the methods to maintain the normal body temperature of the baby are illustrated in Fig. 1.

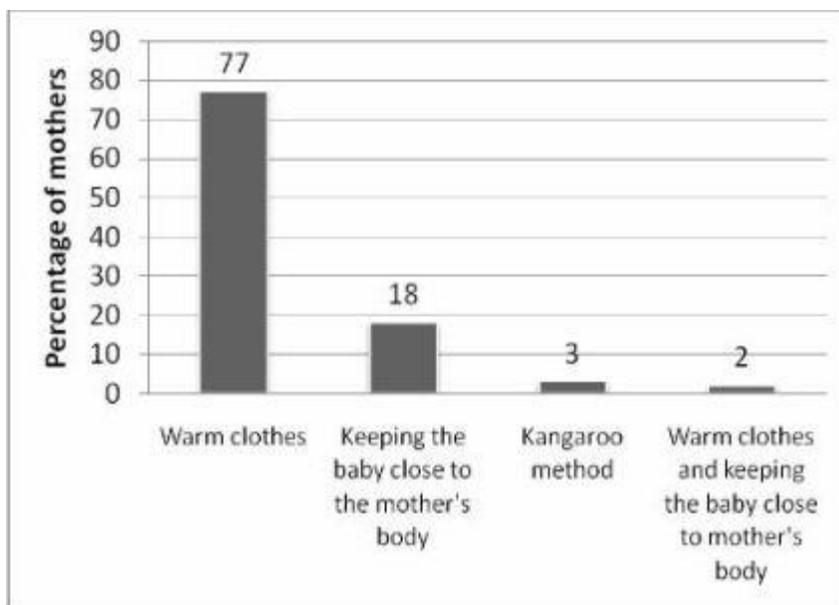
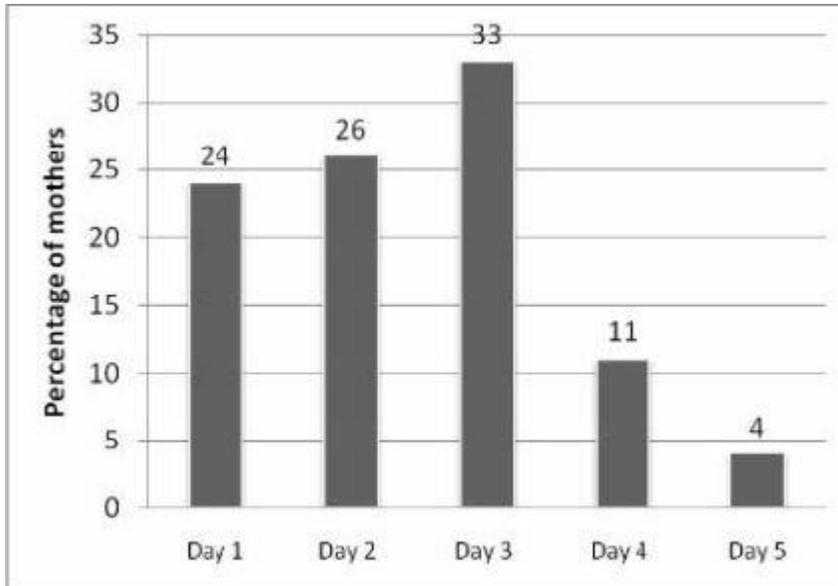
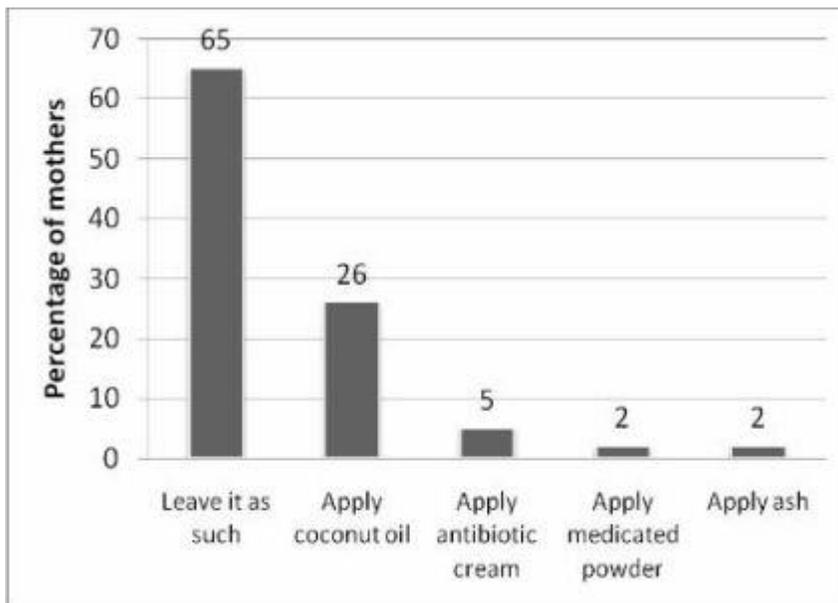


Figure 1. Knowledge about the methods to keep the baby warm



**Figure 2.** Attitude of mothers regarding the timing of first bath

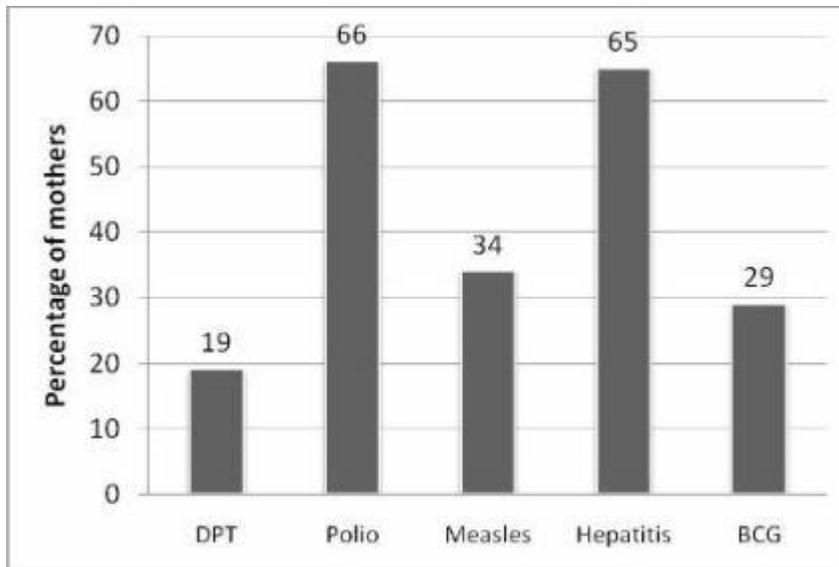
Fig.2 shows the attitude of the mothers regarding the first bath after birth. Only 65% of the mothers had the right knowledge about care of the umbilical stump (Fig.3).



**Figure 3.** Knowledge regarding care of umbilical cord stump

All the mothers opined that vaccines are a must for their babies. But only 79% of them knew that vaccines are given to prevent diseases. While 16% of them thought that they are given to improve the health of the baby and 5% did not know the reason.

Fig.4 shows the percentage of mothers who had the knowledge regarding the existence of the following vaccines – DPT, measles, polio, hepatitis and BCG.



**Figure 4.** Percentage of mothers with knowledge about individual vaccine

When asked what they would do if the child develops fever after DPT vaccination, 42% of them said they would give Syp Paracetamol. 52% of the mothers said that they would take the baby to hospital. While 6% considered it to be normal phenomenon for which nothing needs to be done.

Regarding jaundice in a neonate 34% of the mothers considered it to be always abnormal 33 % considered it to be always normal while 26% of the mothers considered it to be sometimes abnormal and sometimes normal. When asked what they would do if their child develops jaundice in the neonatal period, 93% of them said that they would consult a doctor. 6% said that they would expose the child to sunlight. One of them said that she would use herbal medicine. Oil instillation to the mouth or nostrils of the neonates is still being practiced by 19% of the mothers and the reasons for doing are given in Fig. 5.

**Table 1.** Comparison of neonatal care scores with demographic profile

	No. of cases	Mean score (SD)	Value
<b>Age</b>			
Less than 20	8	4.625 (1.302)	<0.004
21-25	51	6.710 (2.797)	
26-30	31	7.355 (3.354)	
31-35	10	9.9 (4.575)	
<b>Education</b>			
Uneducated	15	4.316 (1.838)	<0.0001
Primary level	14	5.857 (2.187)	
Secondary	30	5.483 (2.040)	
High school	22	10.796 (2.91)	
Graduate	19	8.290 (2.524)	
<b>Occupation</b>			
Housewife/unskilled worker	93	6.717 (3.007)	<0.0001
Professional	7	11.643 (3.567)	
<b>Type of Family</b>			
Nuclear	47	7.516 (3.493)	NS
Joint	37	6.243 (2.978)	
Three generation	16	7.625 (3.117)	
<b>Per capita income</b>			
Less than 500	24	5.771 (2.151)	<0.0001
500-1000	37	5.818 (2.156)	
1000-1500	16	7.938 (4.320)	
More than 1500	23	9.804 (3.282)	
<b>Parity</b>			
Primi	42	6.571 (2.718)	NS
Multi	58	7.418 (3.617)	
<b>Type of antenatal care</b>			
Primary health centre	20	4.250 (2.325)	<0.0001
Secondary care centre	16	5.719 (1.516)	
Tertiary care centre	26	9.510 (3.195)	
Private doctor	27	8.130 (3.080)	
Health worker	8	4.062 (1.266)	
No antenatal care	3	3.500 (3.500)	

The technique of burping was described by 48 % of the mothers when asked what they would do when the child regurgitates after breastfeeding. Regarding gripe water, 61% of the mothers said that they would give it to their babies. The reasons given are illustrated in the Figure 6.

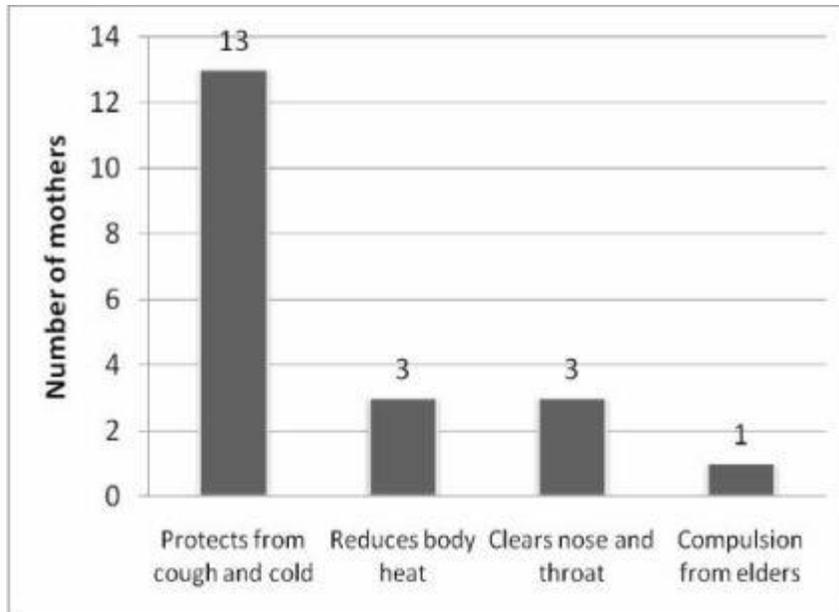


Figure 5. Reasons for practicing oil instillation

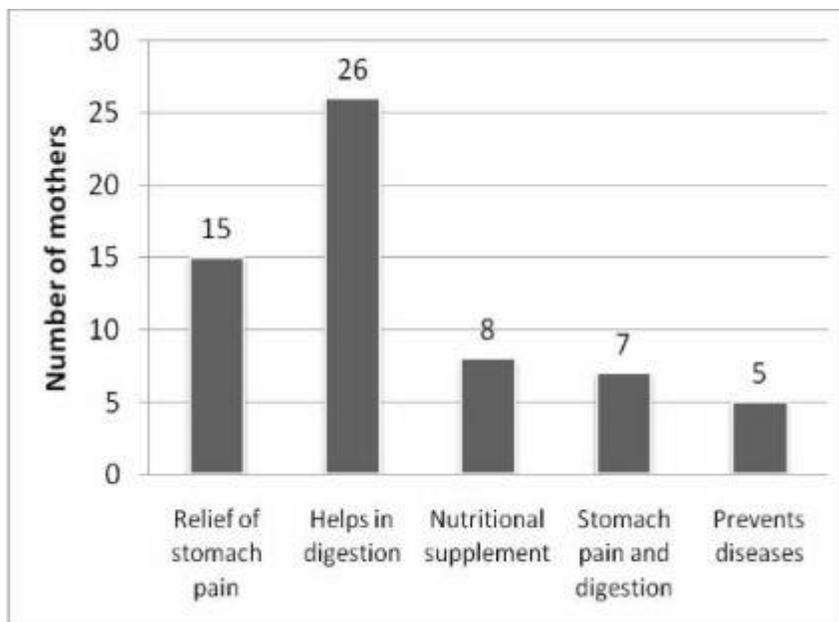


Figure 6. Reason for using gripe water.

The various factors were scored and the maximum score that can be obtained was 17. The mean score for the group was 7.06 with a standard deviation of 3.28. The following table shows the influence of various demographic variables neonatal care practices as measured by total neonatal care score.

## Discussion

Four millions deaths occur globally in the first month of life [1]. Under five mortality has decreased in the recent years but most of it is due to a decrease in the postneonatal mortality [10]. India accounts for a quarter of neonatal deaths occurring globally [11]. Newborn care practices at and immediately following delivery can contribute to morbidity and

mortality of neonates [7,9]. A set of Essential Neonatal Care (ENC) practices have been proven to reduce these risks [9].

Maintaining the normal body temperature is extremely important in newborns because of their larger body surface area. A study done in rural India has proven that even when pregnant mothers have access to a trained birth attendant for delivery at home, thermal care is the component of essential newborn care which gets neglected [5]. It is a very common practice in India to bathe the newborns immediately after birth. This puts the newborn at risk of hypothermia which gets worse with the lack of adequate drying and warm clothes. The reason for this practice is the belief that the blood/fluid/vernix which stays on new-born's skin after birth is impure and has to be removed thoroughly. In the present study >75% of mothers said that the first bath should be given after the 1st day of birth. This is in contrast to 48% of the mothers practiced optimal thermal care in a study done in rural Uganda [12]. Also all the mothers in the present study had a fairly good idea in terms of maintaining body temperature with warm clothes with 3% of them describing the Kangaroo method itself. But more effort can be put into educating these women to prevent hypothermia in newborns.

Care of umbilical cord is always stressed since it can function as the entry point for infections. Despite the efforts to improve the cord care practices, in many rural areas where deliveries are conducted by untrained dhais, guidelines for umbilical cord care are seldom followed. Since our study was done in a hospital setting and the initial part of cord care is taken care of by the hospital staff, our focus was on their knowledge and attitude of postnatal mothers towards the care of cord stump. The World Health Organization recommends dry cord care (where nothing is placed on cord stump unless indicated [13]. Various studies done in developing countries have reported mothers applying substances like mustard oil, turmeric, cow dung, antiseptic lotion etc on the cord stump [10]. In our study 65% of mothers responded that they would leave the cord stump as such. 25% of mothers were applying coconut oil on the umbilical stump. One point to be noted here is that there were 2% of the mothers who said they would apply ash on the cord stump. This shows the lacuna in the education provided to them although they were taken care of in a tertiary care centre.

Although immunizations does not come under the essential newborn care practices, it is crucial that the mothers are imparted the elementary lessons regarding immunization before they get discharged from hospital. Although all the mothers in the present study were of the opinion that vaccines are essential, majority of them did not know which all diseases can be prevented with vaccines. Various studies have proved that better knowledge about the vaccines would improve the vaccine coverage [14,15].

Instillation of oil in the nostrils and ears and oil baths of newborns is a well known practice in this part of the country. This practice leads to Lipoid pneumonia due to aspiration of the oil into the lungs. Cases of Lipoid pneumonia due to this practice have been reported from our institution itself [16]. The practice often includes "oil cleansing" of the throat, eyes, nose, and ears by the mother or grandmother or by a skilled woman whose services are specially sought for the purpose. A recent study has reported that 29% of patients with persistent pneumonia have a history of GERD or oil instillation in the nostrils [17]. In our study 19% of the mothers were of opinion that oil instillation in the nostrils is good for the baby. Fifteen mothers were of opinion that it protects their babies from cough and cold by clearing the nose and throat and 3 of them suggested it as a measure to reduce body heat. Rest of them were practicing it because of the compulsion from elders. Since oil instillation to nostrils can cause long term pulmonary dysfunction, this practice has to be curtailed by providing proper health education to mothers.

Another traditional practice notable is the use of gripe water. The "Woodward's celebrated gripe water" was being used as a non prescription medicine in the past for infantile colic till it was banned in most of the developed countries in the 1980's [18]. But it is still ubiquitous in all the pharmacies in India. It is believed that the alcohol in gripe water provides the soothing effect [19,20]. In our study we found that 61% of the mothers would give gripe water to their babies. This is in contrast to 13% of mothers who were using gripe water in a developed country like England [21]. Unlike the western counterparts who were using gripe water to relieve infantile colic, majority of our subjects (42%) were using it as a preventive measure for easy digestion. A few of them (13%) were even using it as a nutritional supplement. Since there is always a chance that administration of gripe water might mask the symptoms of a major illness this practice should be discouraged.

In the present study we have assigned scores for each of the right responses. The sum of it reflects how aware a mother is, regarding the right neonatal care practices. A one way ANOVA analysis of the total score with various demographic factors was also carried out. Higher age was associated with higher scores and difference among the groups was found to be significant. This might also be due to the trend that women who belong to higher socio-economic status and the one with better education tend to get pregnant at a later age. This tells that more effort has to be put to educate the young mothers. In our study, higher socio-economic status correlated with better neo-natal

care score. This could be because of the educational status of the mothers from higher socio economic class. Majority of the mothers (65.2%) with per capita income more than 1500 were graduates. Better neonatal care score also correlated with better occupation, again 6 out of 7 professionals were graduates and their better education can very well be the reason for better neonatal care scores.

The correlation between the neonatal care scores and the source of antenatal care is quite dramatic. Those with no antenatal care tend to have an average neonatal care score as low as 3.5 whereas those who were being seen in a tertiary care centre had an average score of 9.5. Those who were receiving care from a health worker also seemed to have a low score of 4.1. This might indicate that we need to strengthen the primary health care facilities since they are the only source of health care for a larger proportion of population.

This study indicates that awareness and attitude of postnatal mothers towards neonatal care has lots of lacunae especially in those who belong to the lower socioeconomic status. There is scope for improvement by providing better care and health education for antenatal mothers at primary care level itself.

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