

Original Research Article

A study to assess the knowledge of mothers on home based neonatal care at selected area of rural Bangalore

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ABSTRACT

Background: The new born signifies the beginning of life and provides a foundation for future health of the nation. New born care is strongly influenced by women's social status, health status, home care practices for mother and new born care services. Therefore, the present study has been designed to assess the Knowledge of mothers on home based neonatal care especially among rural mothers.

Methods: After the institutional ethical clearance, five hundred mothers having infants belong to Rural Bangalore were selected by a purposive sampling technique. The structured interview schedule containing demographic variables, knowledge of mothers on home based neonatal care with 27 MCQs having four answers was used. The data collected was analysed using SPSS and minitab. The p value less than 0.05 were considered as the level of significance.

Results: Mother's education, occupation, source of information has highly significant relationship with their knowledge ($p=0.01$). However, religion and family income of the mothers are not associated with their knowledge ($p>0.05$). The mother's knowledge, education, occupation, source of information and dietary pattern have significantly associated with their knowledge on home based neonatal care ($p<0.05$).

Conclusion: 64.6% had moderate, 21.8% had inadequate and 14.2% had adequate knowledge on home based neonatal care. The aspect wise mean knowledge score ranged between 55.3% and 65.3%. Though majority had moderate knowledge on neonatal care, mothers need a regular follow up care in the area of practicing neonatal care.

Keywords: Home based neonatal care, Knowledge on neonatal care, Mothers having infants, Structured interview schedule

INTRODUCTION

The new born signifies the beginning of life and provides a foundation for future health of the nation. It is essential that a baby is born mature, healthy and grows optimally to become a sturdy adult who can participate in the development of the country.¹ New born care is strongly influenced by women's social status, health status, home

care practices for mother and new born as well as maternal and new born care services. Traditional care practices at home and in the community inevitably affect maternal and new born health.²

In India, the current infant mortality rate is 42 per 1000 live births, and in Karnataka the current infant mortality rate is 32 per 1000 live births. Of the 1.5 million child deaths in India in 2012, more than half (0.8 million) were

neonates (first month of life) and the remaining (0.7 million) were children aged 1 to 9 months. Female and male mortality are roughly equal during the neonatal period, but are much higher in girls than boys at ages 1 to 9 months. The Neonatal Mortality rate in Karnataka is 31 per 1000 live births.³ Infant mortality rate was 8.2 per 1000 live births in rural Bangalore district. Home based new born care (HBNC) a new approach innovated and proven in field by SEARCH (society for education, action and research in community health), an NGO working in Gadchiroli District has now been widely accepted the 11th five-year plan of India recommends this approach as the main strategy to reduce infant mortality rate in India.^{4,5}

Neonatal deaths shoot from poor maternal health, inadequate care during pregnancy, inappropriate management of complications during pregnancy and delivery, poor hygiene during delivery and lack of new born care, mothers are the primary care givers of the children good maternal nutrition, prevention and management of anaemia and high quality antenatal care will reduce the incidence of complications and thereby improve the chances of survival of the mother, the foetus, and the new born infants, universal access for women to care in pregnancy and child birth and care of the new born is required to improve the chances of survival for both mother and baby.^{6,7} If the mother is well equipped with the knowledge and importance of neonatal care it is believed that, neonatal deaths can be prevented. Rural mothers are influenced by the cultural beliefs and elder's opinions which may be the cause for neonatal deaths.

Though many studies have been done on neonatal care, our clinical experience in hospitals, and community settings showed that, the neonatal care was not up to the mark with many superstitions. Therefore, the present study has been designed to assess the knowledge of mothers on home based neonatal care especially among rural mothers.

METHODS

A descriptive survey design was adopted in the present study. Five hundred mothers having infants were selected from rural Bangalore by purposive sampling technique. The setting was a taluk with 16 PHCs and 58 sub Centres with a population of 2, 97,622. The present study was conducted at the community areas of rural Bangalore. The study community is located at a distance of 40.5 km from Bangalore city with 4,246 mothers having infants at the time of data collection. The data was collected between 1st September 2013 to 31st January 2015.

Mothers having infants who reside in the community areas of selected PHCs, mothers having infants who were willing to participate in the study and mothers having infants who could speak and understand Kannada or English were included. The mothers having infants who were critically ill and at high risk and mothers having

infants who were not present at the time of data collection were excluded.

The tool was prepared with the help of review of literature, consulting with the guide, opinion from subject experts and researcher's experience in the field. A Blue print was prepared prior to the construction of structured interview schedule. The structured interview schedule contained demographic variables of the mothers; knowledge of mothers on home based neonatal care which contains 27 multi choice questions with four answers regarding knowledge of home based neonatal care. The tool was validated and the reliability of the tool was established by using split half technique. It was pretested with 50 mothers having infants in one PHC community area.

The study was approved by the institutional ethical clearance and prior permission was obtained from the district health & family welfare officer and a written informed consent was taken from the participants.

Statistical analysis

The data collected was tabulated and analysed for statistical significance using SPSS and minitab. The p value less than 0.05 were considered as the level of significance.

RESULTS

In the present study, 70.2% of mothers belong to 20-24 years, 20% of mothers belong to the age group of 25-29 years, 5.6% of mothers are below 20 years and 4.2% of mothers are of age group 30 to 40 years. As per the data collected majority (51.4%) of the mothers had education of 7th to 10th standard, followed by 20% who have studied till 7th std and 12.2% were illiterates (Figure 1). Most of the mothers (86%) were homemakers and 14% was coolies. Regarding source of information majority (52%) got the information from mass media followed by 30% from health care personnel and 18% from elders (Figure 2).

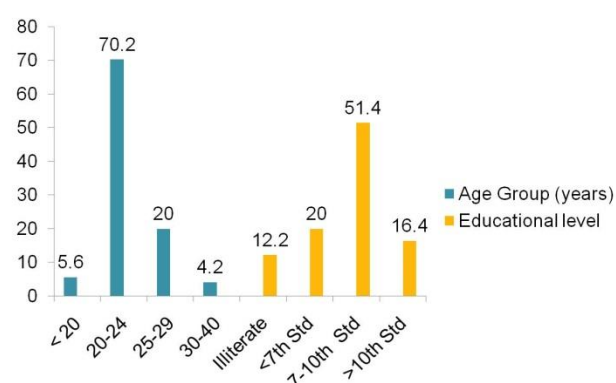


Figure 1: Classification of mothers by age and educational status.

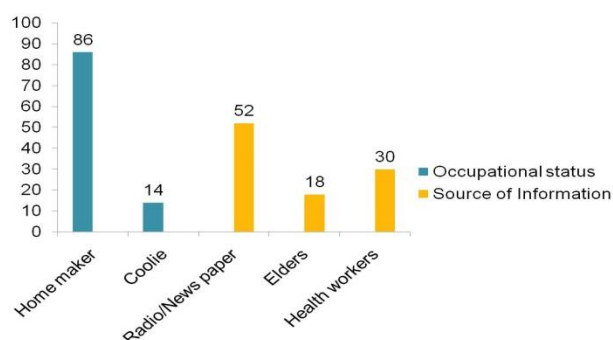


Figure 2: Classification of mothers by occupation and source of information.

Figure-3 depicts 94.4% of the mothers are Hindus and 5.6% are Muslims. Regarding family income per month 78% had income of more than Rs. 2,000 followed by 12% had Rs.2001 to 6000 and the remaining 10% had income Rs.4001 to 6000. Based on the dietary pattern, majority 92.2% had mixed diet and 7.8% had vegetarian diet.

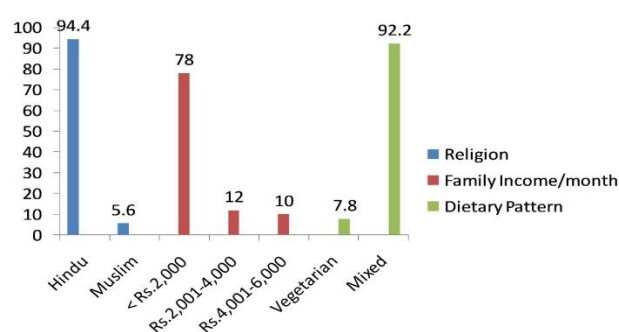


Figure 3: Classification of mothers by religion, family income and dietary pattern.

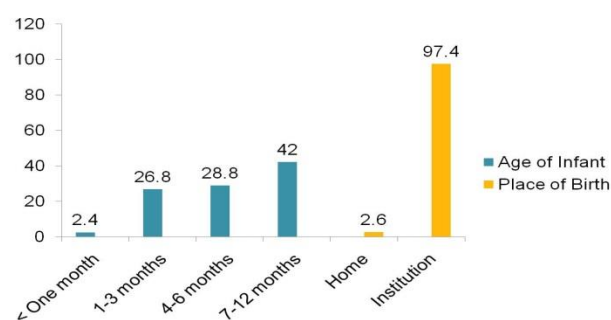


Figure 4: Classification of mothers by age of the infant and place of birth.

Table 2: Aspect wise mean knowledge scores of mothers on home based neonatal care.

No.	Knowledge Aspects	Statements	Max. Score	Respondents Knowledge			
				Mean	SD	Mean (%)	SD (%)
I	Feeding	10	10	6.53	1.6	65.3	16.2
II	Thermoregulation	7	7	3.87	1.5	55.2	21.4
III	Prevention of Infection	10	10	5.82	1.6	58.2	15.6

Based on the age of the infant 42% were 7 to 12 months, 28.8 % were 4 to 6 months, 26.8% were one to three months and only 2.4% were below 1 month. Regarding place of birth 97.4% were delivered in hospital and remaining 2.6% had home delivery (Figure 4). Based on the birth weight of infants, majority (83.2%) weighed 2-2.9kg and 16.8% weighed 3 to 4 kg. Male infants were 41% and females were 59%. Based on the birth order 49.2% were second born and 48.6% were first born and remaining 2.2 were third born (Figure 5).

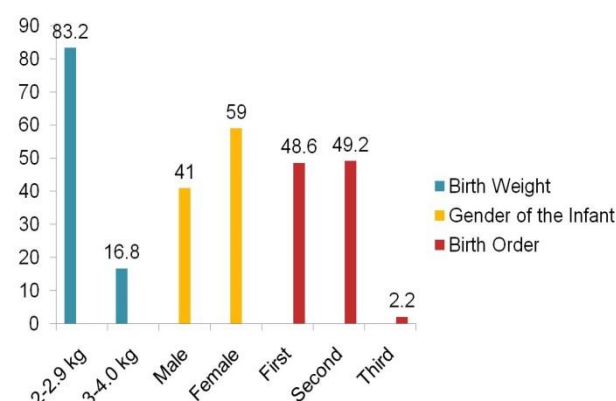


Figure 5: Classification of mothers by birth weight, gender and birth order.

Table 1: Classification of mother's knowledge level on home based neonatal care.

Knowledge level	Category	Respondents	
		Number	Percent
Inadequate	≤50% Score	106	21.2
Moderate	51-75% Score	323	64.6
Adequate	>75% Score	71	14.2
Total		500	100.0

Table 1 explains the knowledge of mothers are classified into 3 levels, majority of the mothers have moderate knowledge on home based neonatal care (64.6%), 21.2% of mothers have inadequate knowledge and only 14.2% have adequate knowledge. The aspect wise mean knowledge of mothers ranged between 55.2% and 65.3%. The overall mean knowledge score of mothers was 60.0% with SD of 13.1%. The highest scores were found in the aspect of feeding 65.3%. Knowledge on thermoregulation was comparatively poor (Table 2).

Table 3a: Association between demographic variables and knowledge level on home based neonatal care.

Demographic Variables	Category	Number	Knowledge Level in %			χ^2 Value	P Value
			Inadequate	Moderate	Adequate		
Age Group (years)	< 20	28	18.6	71.4	10.0	32.22**	p=0.000
	20-24	351	16.6	71.4	12.0		
	25-29	100	35.2	45.0	19.8		
	30-40	21	35.6	36.0	28.0		
Educational level	No formal education	61	37.5	53.5	9.0	27.67**	p=0.001
	7 th Std	100	31.5	58.5	10.0		
	7-10 th Std	257	18.8	67.2	14.0		
	>10 th Std	82	3.8	72.2	24.0		
Occupational status	Home maker	430	17.8	67.0	15.2	20.21**	p=0.000
	Coolie	70	42.0	50.0	8.0		
Source of health Information	Radio/News paper	260	19.5	65.5	15.0	18.65**	p=0.001
	Elders	90	9.5	79.0	11.5		
	Health workers	150	31.0	54.6	14.4		

Note: * Significant at 5% Level, **Significant at 1% level.

Table 3b: Association between demographic variables and knowledge level on home based neonatal care.

Demographic Variables	Category	Number	Knowledge Level in %			χ^2 Value	P -Value
			Inadequate	Moderate	Adequate		
Religion	Hindu	472	21.2	64.2	14.6	1.26	p=0.534
	Muslim	28	20.8	71.2	8.0	NS	
Family Income/ month	< Rs.2,000	390	21.4	67.6	11.0	28.18 NS	p=0.1
	Rs. 2,001-4,000	60	19.0	65.6	15.4		
	Rs. 4,001-6,000	50	22.0	40.0	38.0		
Dietary Pattern	Vegetarian	39	7.0	70.0	23.0	6.13*	p=0.047
	Mixed	461	22.4	64.1	13.5		

Note: *Significant at 5% Level, **Significant at 1% level, NS=Non-Significant

Table 3c: Association between demographic variables and knowledge level on home based neonatal care.

Demographic Variables	Category	Number	Knowledge Level in %			χ^2 Value	P Value
			Inadequate	Moderate	Adequate		
Age of Infant	< One month	12	44.1	47.9	8	27.33**	P<0.01
	1-3 months	134	32.1	54.9	13.0		
	4-6 months	144	24.3	60.7	15.0		
	7-12 months	210	10.8	74.2	15.0		
Place of Birth	Home	13	54.0	38.5	7.5	8.52*	P<0.05
	Institution	487	20.4	65.3	14.3		
Birth Weight	2-2.9 kg	416	21.9	66.0	12.1	9.85**	P<0.01
	3-4.0 kg	84	16.9	58.1	25.0		
Sex of Infant	Male	205	14.0	68.0	18.0	12.79**	P<0.01
	Female	295	26.3	62.2	11.5		
Birth Order	First	243	25.1	63.0	11.9	3.12 NS	P>0.05
	Second	246	18.4	66.2	15.4		
	Third	11	10.0	61.0	29.0		

Note: *Significant at 5% Level, **Significant at 1% level. NS=Non-Significant.

Table 3a demonstrates that, the age of mothers significantly affect the mother's knowledge on home based neonatal care. Mother's education, occupation, source of information has highly significant relationship with their knowledge (p <0.001) and dietary patterns (p <0.05) however, religion and family income of the mothers are not associated with their knowledge

(p<0.05). The mother's knowledge, education, occupation, source of information and dietary pattern has significantly associated with their knowledge on home based neonatal care (Table 3b). The place of birth and birth weight of the infant is a significant determinant of mother's knowledge at 5% level. Age and gender of the

infant have high significant association with mother's knowledge at 1% level (Table 3c).

DISCUSSION

In the present study, the aspect wise mean knowledge of mothers ranged between 55.2% and 65.3%. The overall highest score mean knowledge of mothers was 65.3%. Knowledge on thermoregulation was comparatively poor. The item wise knowledge score states that 62% of the mothers knew about colostrum as the first feed and is to be given to the new-born's. 60% of the mothers knew about exclusive breast feeding and 50% of the mothers believe that consuming herbal preparation will increase the secretion of the milk. The most suitable position to feed the baby is sitting position and is known by 64% of the mothers and 80% of the mothers known about burping. Regarding first bath to the baby 54% of the mothers knew that it should be given after 24 hours. 58% knew the meaning of Kangaroo Mother Care and 48% of the mothers knew its benefits. 64% of the mothers knew that hand should be washed and warmed before touching the baby. 48% of the mothers knew that the baby is exposed to sunlight to prevent physiological jaundice. The findings are in accordance with the findings of Kumar et al.⁸

In the present study, 62% of the mothers knew the meaning of neonate. Only 40% of the mothers knew about the aspects of neonatal care like feeding the baby adequately, keeping the baby warm and protecting the baby from infections. Regarding the first feed of the baby 62% of the mothers knew that breast milk is the first feed and the rest preferred to water, sugar water and honey. 75% of the mothers knew what colostrum is and 62% knew that it helps to fight against diseases. Majority 70% of the mothers knew that breast feeding should be started within one hour after delivery. 60% of them knew the meaning of exclusive breast feeding. 68% of the mothers knew the adverse effects of prelacteal feeds. 50% of the mothers knew the importance of taking enough fluids during post-natal period to get enough secretion of milk. These findings are similar to the findings of Castalino, Nayak and D'souza.⁹

Regarding cleaning of breasts before feeding, 52% of the mother's state that wash with the warm water and dry with clean cloth. 64% of the mothers said that sitting position is the suitable position to feed the baby. Majority 80% of the mothers knew that burping is done to prevent vomiting. 46% of the mothers knew that baby should be kept by the side of the mother on the cot. With respect to the first bath of the baby 54% of them state that, bath should be given after 24 hours. 52% of the mothers said the morning time is better to give bath to the baby. 64% of mothers knew that cotton and woolen clothes are good for the baby to keep it warm. 58% of the mothers knew the meaning of Kangaroo mother care. 48% of them knew the benefits of Kangaroo mother care.

These findings are similar to the findings of Sunanda and Paul.¹⁰

Regarding knowledge on prevention of infection 52% of the mothers knew the benefits of oil bath. 64% of them knew the importance of hand washing and hand warming before touching the baby. 36% of the mothers stated that restricting visitors can prevent the neonatal infections. 70% of the mothers knew that HIV infection is not a common infection in neonates. 64% of the mothers knew that instillation of breast milk can cure the eye infections. Regarding normal colour of the neonate's stool 56% of them knew the correct colour. 48% of the mothers knew that exposure to sun light cures jaundice. 64% of the mothers knew that giving daily bath and wearing fresh cloth will prevent skin infections. 48% of them knew that keeping the baby warm will avoid respiratory infections. These findings are similar to the findings of Pati et al.¹¹

CONCLUSION

A large proportion of mothers (64.6%) had moderate knowledge on home based neonatal care 21.8% had inadequate knowledge and 14.2% of them had adequate knowledge. The aspect wise mean knowledge score ranged between 55.3% and 65.3%. Though they have moderate knowledge on neonatal care, mothers need a regular follow up care in the area of practicing neonatal care.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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