

Knowledge on newborn care among postnatal mothers of term babies with birth weights 2.5 kg or more at the De Soysa Hospital for Women, Colombo and associated factors

*Nalaka Dayaratne¹, Girly de Silva²

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Abstract

Background: Increasing the knowledge of newborn care of postnatal mothers is essential to reduce infant morbidity and mortality.

Objectives: To describe knowledge on newborn care among postnatal mothers at De Soysa Hospital for Women (DSHW), Colombo and associated factors.

Method: A hospital based descriptive cross-sectional study was done at DSHW, Colombo. A random sample of 422 postnatal mothers, who fulfilled the inclusion and exclusion criteria, was included in the study. A pre-tested interviewer-administered questionnaire in Sinhala and Tamil was used to obtain data. Ethical clearance was obtained from the Faculty of Medicine, University of Colombo. Data were mainly represented by percentage frequencies and the mean knowledge score was calculated. Data obtained were statistically analysed by Microsoft SPSS.

Results: Among the study group the mean knowledge on breast feeding was 60.86 ± 0.91 while mean knowledge on handling was 59.71 ± 0.91 . The highest calculated mean knowledge was for essential knowledge on wellbeing of baby (64.38 ± 1.39) while the lowest calculated mean knowledge was for identification of danger signs (37.36 ± 0.90). Overall mean knowledge of the study group was 60.86 ± 0.91 . There was a significant relationship between mean overall knowledge and level of education ($p=0.003$), parity ($p=0.001$) and number of children ($p=0.029$). Calculated overall mean knowledge for a woman educated up to degree level was 67.74 ± 2.76 and for a woman educated up to grade 5 it was 52.14 ± 4.37 . For multipara, overall mean knowledge was 63.17 ± 1.17 and for primipara overall mean

knowledge was 58.51 ± 1.39 . Calculated overall mean knowledge for a woman with one or more children was 62.96 ± 1.24 and for a woman not having a child was 58.96 ± 1.32 .

Conclusions: In our study mean knowledge score among mothers on essential newborn care was above 50% except for mean knowledge score on identification of danger signs which was 37.4. Educational level, parity and having one or more children were significantly associated with good knowledge on essential newborn care.

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(Key words: Knowledge, newborn care, postnatal mothers, De Soysa Hospital for Women)

Introduction

Reduction in under-five mortality rates by two-thirds by the year 2015 is one of the eight Millennium Development Goals (MDGs)¹. Infant mortality rates significantly affect the under-five mortality rates in most developing countries^{2,3}. Maternal and Child Health (MCH) services provide antenatal, perinatal and postnatal care for all mothers who are registered under the system. The antenatal coverage is 98% and around 99.9% of pregnant women undergo institutional deliveries⁴. However, at least 1 postpartum visit within 10 days of delivery by public health midwives are still about 78%⁴.

Sri Lanka, a middle income country, has a well-established MCH care programme, followed by skilled attendance at birth. The maternal, neonatal and child mortality rates are very low when compared with the countries of similar backgrounds⁵. According to the Family Health Bureau (FHB) data 2013, the neonatal mortality rate is 6.5⁴. When neonatal deaths are considered, 54.4% are early neonatal (from day 1 to 7) and the rest are late neonatal (from day 7 to 28), during the time most babies have been sent home and are under parental care⁴. Even though the majority of infant deaths were due to congenital anomalies and prematurity, asphyxia, sepsis and other causes contributed to 30% of infant deaths⁴. This can be avoided by improving the knowledge of mothers on care and handling of babies and prompt identification of danger signs.

¹Acting Paediatrician, Base Hospital, Pimbura-Agalawatta, ²Consultant Paediatrician, Colombo

*Correspondence: nalakedayaratne@yahoo.com
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Objectives

To describe knowledge on newborn care among postnatal mothers at De Soysa Hospital for Women (DSHW), Colombo and associated factors.

Method

A hospital based descriptive cross-sectional study was conducted from 1st July to 1st September 2012 at DSHW, Colombo. The study population comprised 422 postnatal mothers who had delivered babies at DSHW, Colombo. Babies delivered at term by normal vaginal delivery, lower segment caesarean section, forceps delivery or vacuum extraction and who did not need any newborn resuscitation in the perinatal period were included in the study. Mothers who were diagnosed as mentally subnormal or psychiatrically disturbed and ill, mothers who had delivered a baby needing special care due to prematurity, low birth weight, congenital abnormality or baby encountering any problem prenatally or in the immediate postnatal period and mothers who had delivered a dead baby or whose baby died immediately after delivery, were excluded. Ethical clearance was obtained from the Ethical Review Committee of the Faculty of Medicine, University of Colombo and from the Ethical Review Committee at DSHW.

Out of daily deliveries two patients per ward were selected using simple random sampling every day until the relevant sample size was obtained. A pre-tested interviewer-administered simple clear questionnaire (Sinhala & Tamil) was used to obtain data. Necessary modifications were done to avoid ambiguity and ensure validity. Prior to commencement of the study, written informed consent was obtained from the mother. If the questions asked were of a sensitive nature, questioning took place only at times when the mothers were comfortable, free and relaxed. Mothers were assured confidentiality. All questions were pre-coded for convenience of data entry and done during the planning period. Prior to analysis, appropriate dummy tables were made to cover all the areas of specific objectives. Data were processed and analysed using a personal computer with SPSS software (17th version). Ten percent of entered data were randomly cross checked to make sure of the completeness of data entry and to detect input errors. A score was developed for the assessment of knowledge under each section and overall newborn care. Every correct answer was given 1 mark and an incorrect or don't know answer was given 0 marks. Data were mainly represented by percentage frequencies and mean knowledge score which was calculated by dividing the number of correct answers given by the respondent to the particular "section" by the total questions asked for the same "section" mentioned before. F-Statistic by Analysis of Variance (ANOVA) for comparing means (more

than two categories in the independent variable) and independent sample t-test for comparing means (only two categories in the independent variable) were done for identifying the factors associated with the knowledge gained by mothers.

Results

The distribution of the study sample according to age group is shown in Figure 1.

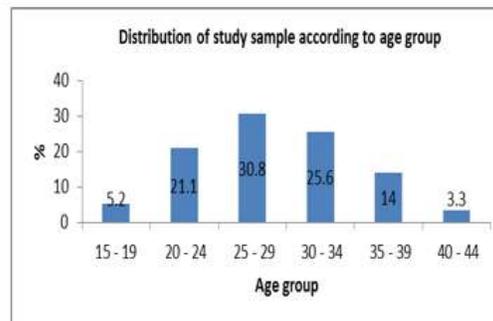


Figure 1: Distribution of study sample according to age group

Mean age of mothers was 28.6 years with a standard deviation of 5.727, the maximum age being 44 years and the minimum age 16 years.

The distribution of the study sample according to ethnicity is shown in Figure 2.

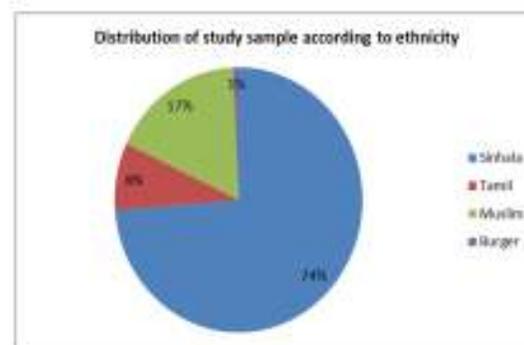


Figure 2: Distribution of study sample according to ethnicity

When permanent residence was considered, 194 (46%) mothers were from Colombo Municipal Council (CMC) area, 66 (15.6%) were from the suburbs in Colombo district and 162 (38.4%) were from outside the Colombo district. Thirty eight (9%) mothers had education up to grade 5 or less, 54.7% were educated up to GCE O/L, 27.3% up to GCE A/L and 9.0% up to Degree/Diploma. In our study, 78.2% mothers were housewives and 21.8% were employed. In the study group 208 (49.3%) mothers were primipara and 220 (52.1%) had no children. When the study sample was analysed according to the pattern of living, it was found that 249 (59%) of

mothers who have participated lived with their nuclear family while the rest lived with an extended family. Description of the study sample according to

the overall mean knowledge on breast feeding and related sub categories is shown in Table 1.

Table 1

Description of study sample according to overall mean knowledge on breast feeding and related sub categories

	Mean knowledge score	Std. error of mean
Overall knowledge on breast feeding	59.71	0.91
Knowledge regarding breast milk	44.07	0.86
Knowledge regarding techniques	65.23	1.05

Although the mothers had good knowledge on breast feeding technique their knowledge on breast milk was low. Description of the study sample according

to the overall knowledge on handling the baby and related sub categories is shown in Table 2.

Table 2

Description of study sample according to overall knowledge on handling the baby and related sub categories

	Mean knowledge score	Std. error of mean
Overall knowledge on handling the baby	59.87	1.16
Keeping the baby warm	57.45	1.23
Way of handling the baby	63.93	1.35
Bathing and washing	51.69	1.26

Description of study sample according overall knowledge and knowledge on breast feeding, handling of baby, knowledge on wellbeing of baby

and identification of danger signs is shown in Table 3.

Table 3

Description of study sample according to overall knowledge and knowledge on breast feeding, infant handling, knowledge on wellbeing of the baby and identification of danger signs

	Mean knowledge score	Std. error of mean
Overall knowledge	60.86	0.91
Knowledge on breast feeding	59.71	0.91
Knowledge on handling of baby	59.87	1.16
Essential knowledge on wellbeing of baby	64.38	1.39
Identification of danger signs	37.36	0.90

Mean knowledge on identification of danger signs was poor according to the table 3. The results of

comparing mean knowledge scores is shown in Table 4.

Table 4: The results of comparing mean knowledge scores

Factor	T-statistic	F-statistic	df	P value
Age group		1.666	5	0.142
Ethnicity		0.475	3	0.700
Area		0.633	2	0.531
Level of education		4.109	4	0.003*
Parity	-2.566		414	0.011*
No. of children	-2.566		414	0.029*
Type of family		0.045	414	0.964

* Significant at the 5% significance level.

According to Table 4, mean knowledge scores of categories of the level of education, parity and number of children are significant at the 5% significance level. The effects of level of education,

parity and number of children to overall knowledge are shown in tables 5-7. When the level of education increases in the mothers, the mean knowledge also increases, except mothers with no schooling.

Table 5. Overall knowledge according to the level of education

Level of education	Mean knowledge score	Std. error of mean
No schooling	61.11	2.83
Up to Grade 5	52.14	4.37
Up to GCE O/L	59.53	1.20
Up to GCE A/L	63.69	1.63
Diploma/Degree	67.74	2.76

Table 6. Overall knowledge according to parity

Parity	Mean knowledge score	Std. error of mean
Primipara	58.51	1.39
Multipara	63.17	1.17

Table 7: Overall knowledge according to number of children

Number of children	Mean knowledge score	Std. error of mean
0	58.96	1.32
One or more	62.96	1.24

Discussion

In Sri Lanka, though there is a well-established family health programme and almost all the pregnant mothers are being well addressed and educated on all the health issues regarding pregnancy and early care of the newborn, the level of knowledge among these women varies due to many factors. Mothers should be competent in immediate newborn care as there is a window period between discharge home from the postnatal ward and first midwifery visit within the first 5 days⁴. During this period, mothers need to look after the newborn alone or probably with the support of the father and relations who may be ignorant on proper newborn care. This is the most important period of the life of newborns as they are left with physically and emotionally stressed mothers with or without family support⁵. It is essential for the mother and the family members who are taking care of the baby to have good knowledge on feeding, thermoregulation, handling and identification of danger signs as a significant proportion of neonatal deaths occur due to poor home based care⁶. To achieve this target almost all the mothers are directed to antenatal clinics from the beginning of their first pregnancy and also in subsequent pregnancies by the field health staff where the key role is played by the Public Health Midwives (PHMs)⁴. Almost all these antenatal clinics provide knowledge on newborn care for pregnant mothers.

In this study the mean level of knowledge was assessed in various aspects of newborn care gained within the antenatal period by the pregnant mothers by the time they delivered the baby. According to Sri Lanka Democratic and Health Survey (DHS) 2006/07, female education attainment is 15% up to grade 5, 26% up to GCE O/L and 57% above that around Colombo district⁷. In our study 38 (9%) mothers had education up to grade 5 or less, 54.7% were educated up to GCE O/L, 27.3% up to GCE A/L and 9.0% up to Degree/Diploma. According to

DHS 2006/07 nationally 62% of women aged 15-50 years were having at least one child⁷. In the study group 208 (49.3%) mothers were primipara and 220 (52.1%) had no children. According to DHS 2006/07, 63% of women in Colombo district are unemployed and only 37% are employed⁷. In our study, 78.2% mothers were housewives and 21.8% were employed. When the pattern of living was analysed, 59% of the study group lived with their nuclear family while rest lived with an extended family.

The mean score on overall knowledge among the pregnant mothers in the study group was 60.9. The mean score of knowledge on breast feeding was 59.7. However, whilst the mean score of knowledge on correct technique of breast feeding was 65.2, the mean score of knowledge on the importance of breast milk was only 44.1. The mean knowledge on handling and taking optimal care of the baby was 59.9. Whilst 57.4% knew how to keep the baby warm, 67% knew how to bathe the baby and 63.9% knew the precise way of handling especially with regard to hygienic practices that needs to be followed. The essential mean score of knowledge on wellbeing of the baby was 64.4. Identification of danger signs is an important aspect of newborn care⁸. However, in our study, the mean score of identification of danger signs was 37.4 which is poor in comparison to the other areas of newborn care. In addition to identification it is necessary to have some knowledge of when to act, what to do and where to go for help. A similar study was done in Nepal by Shrestha et al in 2010 and their mean knowledge on newborn care was 47.2 and mean knowledge on identification of danger signs was 35.6⁹. The better knowledge shown in the study group is due to the well-established family care package which is present in Sri Lanka and the high literacy rate compared to our neighbouring countries. However still there is room for improvement especially in the identification of danger signs.

When factors associated with knowledge were analysed, there was no significant relationship of mean overall knowledge to age, ethnicity and area of residence or type of family they were in. However, the level of education, parity and number of children had a significant association (Table 4). There was more knowledge associated with the level of education of the mothers (Table 5). Mothers who had their second or subsequent pregnancies had more knowledge on all aspects of new born care in comparison to mothers undergoing that experience first time (Table 6). This also explains the higher knowledge among mother who have older children (Table 7). This may be due to the fact that they have exposed to the antenatal health education several times and experience with their older children.

Conclusions

- In our study the mean knowledge score among mothers on essential newborn care was above 50 except for knowledge on identification of danger signs which was around 37.
- Educational level, parity and having one or more children were significantly associated with good knowledge on essential newborn care.

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