

Original Research Article

# Effectiveness Of Planned Teaching Programme On Newborn Care Among Postnatal Mothers In A Selected Hospital At Mangalore, Dakshina Kannada, Karnataka

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## ABSTRACT

A newborn is an healthy infant born at term and should have an average birth weight, cries immediately following birth, establishes independent rhythmic respiration and quickly adapts to change environment. Newborn care refers to caring of the normal baby to ensure that the baby is made comfortable, fed and enhances early attachment process. Any deviation associated with negligence in appropriate care may lead to increased infant mortality rate. Global estimates of the distribution of direct causes of neonatal deaths indicate that severe infections, preterm birth and asphyxia are the three major killers of neonates. With this direction, the researchers assessed the effectiveness of planned teaching programme on newborn care among postnatal mothers in a selected hospital at Mangalore, Dakshina Kannada, Karnataka.

## Materials & Methods

Quantitative approach was adopted in the present study. Pre-experimental, i.e., one group pre-test post-test design was used in this study. Purposive sampling technique was used for the selection of the sample. A close-ended structured knowledge questionnaire was used to assess the knowledge of postnatal mothers on newborn care. The study was conducted in selected Hospital at Mangalore with the sample size of 30 postnatal mothers. The data is analysed using descriptive & inferential statistics.

## Results

The findings revealed that the pre-test knowledge level of knowledge of postnatal mothers was moderate 73%, poor 24% and good 3%. The post-test knowledge score (21.26±1.39) was higher than the pre-test knowledge score (13.1±3.61). Paired' t test was showed that the gain in the knowledge was significant after administering planned teaching programme. Association between pre-test knowledge with demographic variables revealed that there was significant association between the pre-existing knowledge with demographic variable like education and newborn care.

## Conclusion

The present study revealed that the postnatal mothers have lack of knowledge regarding newborn care and the overall findings of the study revealed that there was a highly significant increase in the knowledge of postnatal mothers on newborn care following the administration of the teaching programme. Therefore it was concluded that the planned teaching programme was highly effective in improving the knowledge of postnatal mothers on newborn care.

**Keywords:** Newborn care; planned teaching programme; postnatal mothers.

## INTRODUCTION

An infant or baby is the very young offspring of humans. A newborn is an infant who is within hours, days, or up to a few weeks from birth. In medical contexts, newborn or neonate (from Latin, neonatus, and newborn) refers to an infant in the first 28 days after birth.<sup>1</sup>

A newborn is a healthy infant born at term and should have an average birth weight, cries immediately following birth, establishes independent rhythmic respiration and quickly adapts to change environment. Newborn care refers to caring of the normal baby to ensure that the baby is made comfortable, fed and enhances early attachment process. Newborn babies constitute the foundation of a nation and no sensible government can afford to neglect their needs and rights. Healthy and sturdy babies are likely to evolve into physically and mentally strong adults and enhance quality of human resource development. Any deviation associated with negligence in appropriate care may lead to increased infant mortality rate<sup>2</sup>.

Every minute 50 babies are born in India accounting for 20 million births every year. Almost three neonates die every minute leading to 1.2 million neonatal deaths every year thus accounting for 31% of global neonatal deaths. In 2003 the NMR was around 44/1000 live births and it accounts for nearly 2/3<sup>rd</sup> of IMR<sup>3</sup>.

Global estimates of the distribution of direct causes of neonatal deaths indicate that severe infections, preterm birth and asphyxia are the three major killers of neonates. More than 60% of the neonatal death occurs within 7 days of birth with the majority of these happening within the first 24 hours of birth. In the United States, infant mortality is 629 per 100,000 live births or 6.9 per 1000 live births. The infant mortality rate for European Americans was 5.7 per 1000 births in 2003-05. For African Americans it was 13.6 per 1000, and for Hispanic Americans it was 5.6 per 1000. Overall, the infant mortality rate for the United States was 6.9 per 1000 in 2003-05<sup>4</sup>.

In India, child mortality accounts for 2/3 of the total mortality and 1/2 of the paediatric deaths occur during infancy. In 2003, the infant mortality rate was 64/1000 live births. India's record on child mortality is worse than that of neighbouring Bangladesh, one of the poorest countries in the world. The IMR has gone up from 23 to 27 per 1,000 live births in Chandigarh and from 31 to 34 in the Andaman and Nicobar Islands. In Uttarakhand, the number of children dying per 1,000 live births has gone up from 43 to 48, in Manipur from 11 to 12 and in Meghalaya from 53 to 56. Similarly, the IMR has shown an uptrend in Nagaland to 21 from 20 in the previous year, from 33 to 34 in Sikkim, and from 36 to 39 in Tripura<sup>6</sup>.

The care of neonates in the family is governed by the family's knowledge, awareness, cultural practice etc. Certain practices and customs regarding newborn care are unsafe and may result in increasing risk of both morbidity and mortality of the neonate. The babies' health in the womb depends on the health of the mother. But after being born, survival, health and growth depends mainly on the mother's knowledge of child rearing which practices and the immediate environment in which the family lives<sup>7</sup>.

A nursing intervention from the Nursing Interventions Classification (NIC) defined as management of neonate during the transition to extra uterine life and subsequent period of stabilization. A score of recent publications by the World Health Organization (WHO), Save-the-Children, United

Nations Children's Fund (UNICEF), journals, and other scientific publications reported consistently that neonatal mortality constitute 40-70% of deaths in infancy and that 99% of these deaths occurred in developing countries, with highest neonatal mortality rates (NMRs) in sub-Saharan Africa. The global burden of newborn illness shows that a disparity of up to 30-folds exists between countries with highest and lowest NMRs. Four million babies die in developing countries and about 42% of these deaths are due to infections. Other major causes include perinatal asphyxia (21%), birth injuries (11%), prematurity and low birth weight (10%) and congenital abnormalities (11%). It was also observed that two-thirds of the deaths in the neonatal period occur in the first week; among these deaths, two-thirds occurred within the first 24 hours. Hence there is a need to educate a postnatal mothers regarding newborn care will save newborns' lives<sup>8</sup>.

Nurses are the direct care providers. They are the first one to interact with mothers. They can educate the postnatal mothers on the importance of newborn care especially the proper newborn care which will help in improving hygienic practices cord care, eye care, initiation of breast feeding and immunisation. So there will be marked reduction in the neonatal mortality morbidity rates.

## MATERIALS & METHODS

Quantitative approach was adopted in the present study. Pre-experimental, i.e., one group pre-test post-test design was used in this study. Purposive sampling technique was used for the selection of the sample. A close-ended structured questionnaire was used to assess the knowledge of postnatal mothers on newborn care. The study was conducted in Lady Goschen Hospital, Mangalore with the sample size of 30 postnatal mothers. After pre-test, a planned teaching programme was administered to mothers and assessed the effectiveness of teaching programme by using post test.

## RESULTS

The results have been organized and presented in four parts:

**Part I:** Description of demographic characteristics of the postnatal mothers.

**Part II:** Analysis of pre test knowledge of postnatal mothers regarding newborn care.

Section A: Assessment of the level of existing knowledge.

Section B: Area-wise analysis of the pre test knowledge scores.

**Part III:** Evaluation of the effectiveness of planned teaching programme on newborn care.

Section A: Quartile distribution of the pre-test and post-test knowledge scores.

Section B: Area-wise Mean, SD, and Mean %ages of pre test and post test

**Part IV:** Testing of hypothesis

Section A: Significance of difference between pre-test and post-test knowledge scores.

Section B: Association between Pre-test knowledge scores of postnatal mothers with selected demographic variables.

**Part I: Description of demographic characteristics of the postnatal mothers.**

**Table I:** Description of demographic characteristics of the postnatal mothers

Demographic Variable	Frequency	Percentage
<b>Age</b>		
< 20 years	06	20
21-25 years	15	50
26-30 years	09	30
>30 years	00	00
<b>Religion</b>		
Hindu	24	80
Muslim	06	20
Christian	00	00
<b>Education</b>		
Primary	06	20
Secondary	21	70

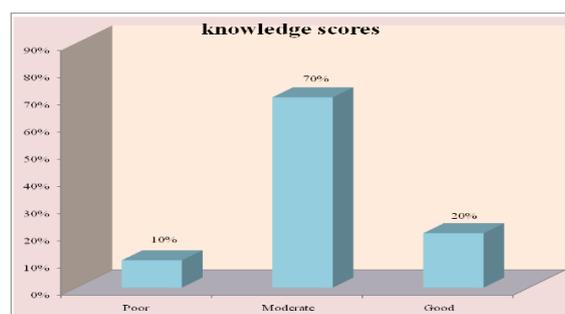
Graduation	03	10
No formal education	00	00
<b>Occupation</b>		
Housewife	24	80
Daily earners	03	10
Working in private sector	03	10
Working in public sector	00	00
<b>Family income</b>		
Below Rs. 3,000/-	06	20
Rs. 3,001-5,000/-	12	40
Rs. 5,001-7,000/-	09	30
Rs. 7,001-9,000/-	03	10
Above Rs. 9001/-	00	00
<b>Type of family</b>		
Nuclear family	12	40
Joint family	18	60
Extended family	00	00
<b>Parity</b>		
Para I	15	50
Para II	15	50
Para III & above	00	00

As per Table I, the distribution of postnatal mothers according to their age shows that highest %age, that is, 50%, of the sample belonged to the age group of 21-25 years, 30 % belonged to the age group of 26-30 years, 20% belonged to the age group of < 20 years, and no one belonged to the age group of >30 years. The distribution of subjects based on religion, which reveals that majority of the subjects (80 %) were Hindus, 20 % were Muslims and no one was Christians. The data collected on the educational status of mothers reveals that 70% of the subjects had secondary education, 20 % had primary education, and 10% had graduation. The distribution of mothers according to their occupation shows that 80% were housewives, ten % were daily earners, and ten % was working in private sector. Also shows that 40 % of the mothers belonged to family income group of Rs. 3,001-5,000, 30 % to Rs. 5,001-7,000, 24 % belonged to the family income group of below Rs. 3,000 and 10% belonged to the family income of Rs.7,001-9,000. The highest percentage of mothers (60%) was from joint family and 40% lived in nuclear families. There were no mothers belonging to extended families. The data collected on parity of mothers reveals that 50% were Para I and II and no one belonged to Para III and above.

## Part II: Assessment of existing knowledge of postnatal mothers regarding newborn care

### Section A: Assessment of the level of existing knowledge

Data in the Figure 1 shows that majority (73%) of the mothers had moderate knowledge, 24 % had poor knowledge and three % had good knowledge.



**Figure 1:** Assessment of existing knowledge of postnatal mothers regarding newborn care

### Section B: Area-wise analysis of the knowledge scores

This part deals with area- wise mean, SD and mean %age of pre test level of knowledge scores of postnatal mothers regarding newborn care.

**TABLE 2:** Area- wise mean, SD and mean %age of pre test level of knowledge scores of postnatal mothers regarding newborn care

n=30

Sl. No.	Knowledge areas	Min. score	Max. score	Max. possible	Mean	SD	% Mean	Remark
1.	Area-I	03	11	14	7.7	2.376	55	Moderate
2.	Area-II	02	6	8	3.4	1.055	42.5	Moderate
3.	Area-III	01	3	4	1.8	0.886	45	Moderate
	Total	06	18	26	13.1	3.61	50.38	Moderate

As per table 2, mothers had highest level of knowledge that is 55% in the area of general care of the newborn. The mean %age in the area of immunization is 45%, it is almost similar with the area of breast feeding that is 42.5%. However, the total mean score and SD is 13.1±3.61 with a total mean %age of 50.38 %. This reveals that the postnatal mothers had moderate level of knowledge on newborn care.

**Part III: Evaluation of the effectiveness of planned teaching programme on newborn care**

**Section A: Quartile distribution of the pre-test and post-test knowledge scores**



**Figure 2:** Less than ogive of the pre test and post test level of knowledge score of postnatal mothers regarding newborn care

According to figure 2, a significant difference showed between the quartiles of pre-test and post-test scores. The pre-test median score was 15 and post test median score was 21. The difference of six indicates that there is an increase in the knowledge score. This indicates that there is significant increase in the knowledge of postnatal mothers regarding newborn care after the planned teaching programme.

**Section B: Area-wise effectiveness of planned teaching programme with Mean, SD, and Mean percentages of pre test and post test level of knowledge**

**TABLE 3:** Mean, SD, Mean difference of pre test and post test

Areas	No. of items	Knowledge score								
		Pre-test(A)			Post-test(B)			Effectiveness(B-A)		
		Mean	SD ±	Mean %	Mean	SD ±	Mean %	Mean	SD (±)	Mean %
Area I	14	7.7	2.376	55	11.6	1.01	82.85	3.5	-1.35	27.85
Area II	08	3.4	1.055	42.5	6.46	0.66	80.75	3.06	-0.39	38.25

Area III	04	1.8	0.886	45	3.2	0.7	80	1.4	-0.186	35.00
<b>Total</b>	<b>26</b>	<b>13.1</b>	<b>3.61</b>	<b>50.38</b>	<b>21.36</b>	<b>1.39</b>	<b>82.15</b>	<b>8.26</b>	<b>-2.22</b>	<b>31.77</b>

The data presented in the table 3 shows that the total mean knowledge score is increased by 31.77% with mean  $\pm$ SD of  $8.26 \pm 2.22$  after the teaching programme.

Comparison of the area wise mean and SD of the knowledge scores showed that, the effectiveness of teaching programme in the area of 'general care of newborn' had 27.85% increase in the mean %age knowledge scores with the mean and SD of  $3.5 \pm 1.35$  was observed with that of 55% in pre test and 82.85% in the post test. In the area of 'breast feeding' was 38.25 % increase in the mean %age knowledge scores with the mean and SD of  $3.06 \pm 0.39$  was observed with that of 42.5% in pre test and 80.75 % in post test. In the area of 'immunization' was 35% increase in the mean %age knowledge scores with the mean and SD of  $1.4 \pm 0.186$  with that of 45 % in pre test and 80% in the post test. The overall effectiveness shows that 31.77% increase in the mean %age with the mean and SD of  $8.26 \pm 2.22$  with that of 50.38% in pre test and 82.15% in the post test. The results reveal that the overall knowledge was more in the post test compared to that of the pre test as the post test knowledge score come under good knowledge level which was moderate in the pre test assessment.

**TABLE 4:** Significance of difference between pre test and post test knowledge score of mothers regarding newborn care.

Areas	Mean Effectiveness	't' value	Table value	Inference
Area I	3.87	8.06	1.699	Significant
Area II	3.00	12.5	1.699	Significant
Area III	1.3	5.909	1.699	Significant
<b>Over all</b>	<b>7.9</b>	<b>10.57</b>	<b>1.699</b>	<b>Significant</b>

As per table 4, the mean post-test score was significantly higher than that of their mean pre-test score. The calculated 't' value ( $t=10.57$ ,  $df=1.699$ ) was higher than that of the table value in all sections. Therefore, the null hypothesis was rejected and alternate hypothesis was accepted indicating that the gain in knowledge was not by chance. Hence, it is concluded that there is a significant gain in knowledge of postnatal mothers through planned teaching programme on newborn care.

#### Part- IV: Association between knowledge of the respondents on new born care and selected demographic variables

**TABLE 5:** Association between knowledge of the respondents on new born care and selected demographic variables

**n = 30**

Demographic variable	Knowledge score		Calculated value ( $\chi^2$ )	Table value	df	Inference
	< median (< 15)	$\geq$ median ( $\geq 15$ )				
<b>Age of the mother</b>						
$\leq 25$	10	11	1.67	3.84	1	P=0.196 NS
$> 25$	02	7				
<b>Religion</b>						
Hindu	10	14	2.982	3.84	1	P=0.084 NS
Muslim & Christian	03	03				
<b>Education</b>						
Primary & Secondary	10	17	4.35	3.84	1	P=0.037 S
Graduation &	03	0				
<b>Occupation</b>						
Housewife & Daily earners	12	15	0.1344	3.84	1	P=0.714 NS
Private sector & public sector	01	02				
<b>Family income</b>						

≤ Rs. 5,000	06	12	1.831	3.84	1	P=0.176 NS
> Rs. 5,000	07	05				
<b>Type of family</b>						
Nuclear family	04	08	0.812	3.84	1	P=0.367 NS
Joint family	09	09				
<b>Parity</b>						
Para I	05	10	1.22	3.84	1	P=0.269 NS
Para II	08	07				

NS: Not significant

As per Table 5, there is a significant association between knowledge and education of the mother and there is no significant association between knowledge score and age, religion, occupation, family income, type of the family and parity of the mother.

## DISCUSSION

The discussion of the results are done under the following heading.

### Part-I: Description of demographic characteristics of the postnatal mothers

Fifty percent of the samples are aged 21-25 years. Eighty percent of respondents are Hindu religion, secondary education is 70 percent and eighty percent of respondents are housewife. Forty percent have income between Rs. 3001-5000 and 60 percent of sample is joint family; both Para-I and Para-II are 50 percent.

A similar study was conducted in south India revealed that 51 percent were in the age group of 21-25 years of age, the most affected group were multipara (58 percent), 30 percent of cases received secondary education. Majority of the study sample occupation was housewife (90.5 percent) and 37 percent was income between Rs.500-1000. 47 percent of sample is nuclear family. Antenatal care was more consult in private doctor (27percent)<sup>9</sup>

### Part II: Analysis of pre test knowledge of postnatal mothers regarding newborn care.

Assessment of the level of knowledge of mother's shows that the highest percentages (73.0 percent) of the mothers have moderate knowledge, 24 percent of the mothers have moderate knowledge and 3.0 percent have poor knowledge regarding newborn care. Analysis shows mothers had highest level of knowledge that is 55 percent in the area of general care of the newborn. The mean percentage in the area of immunization is 45 percent; it is almost similar with the area of breast feeding that is 42.5percent. However, the total mean score and SD is  $13.1 \pm 3.61$  with a total mean percentage of 50.38 percent. This reveals that the postnatal mothers had moderate level of knowledge on new born care. This indicates that the knowledge is moderate.

A similar finding were also reported in a study conducted to assess mothers knowledge on newborn care as well as factors associated with poor knowledge among 446 mother-newborn in Sri Lanka. The result revealed that 90 percent of mothers knew about breastfeeding on demand, the advantages of colostrums and the duration of exclusive breastfeeding. Except for a few conditions, mothers demonstrated a satisfactory knowledge in recognizing danger signs of the newborn. The researcher concluded that mothers had a satisfactory level of knowledge about breastfeeding and recognition of danger signs, but knowledge about care of the newborn was poor<sup>10</sup>.

### PART III: Evaluation of the effectiveness of planned teaching programme on newborn care

The overall effectiveness shows that 31.77 percent increase in the mean percentage with the mean and SD of  $8.26 \pm 2.22$  with that of 50.38 percent in pre test and 82.15 percent in the post test. The results reveal that the overall knowledge was more in the post test compared to that of the pre test as the post test knowledge score come under good knowledge level which was moderate in the pre test assessment.

Similar findings have been reported in a quasi-experimental pre-posttest design in Japan. The result revealed that intervention group rose significantly from 34.8 at early postpartum to 49.9 at one month after birth ( $p < 0.01$ ). For the control group, the score rose from 39.5 at early postpartum to 46.5 at one month after birth ( $p = 0.03$ ). The early postpartum fully breastfeeding and newborn care was 90percent for the intervention group and 89 percent for the control group. At one month postpartum, the fully breastfeeding and newborn care declined significantly to 65 percent for the control group compared to 90 percent for the intervention group ( $p = 0.02$ ). The researcher concluded that the Breastfeeding, newborn care and Self-Care Program increased mothers' self-efficacy for breastfeeding and had a positive effect on the continuation of breastfeeding and newborn care<sup>11</sup>.

#### **Part IV: Testing of hypothesis i.e. to find the association between pre-test knowledge scores of postnatal mothers on newborn care with selected demographic variables.**

In the present study, analysis in relation to the association between knowledge and demographic variables reveals that the chi-square values were less than the table value for age, religion, occupation, type of family, family income and, parity of postnatal mothers at 0.05 levels of significance. This indicates that there was no significant association between the demographic variables such as age, religion, occupation, type of family, family income and, parity and knowledge of newborn care. So the researcher accepts the null hypothesis. But the calculated value for education was more than that of the table value 3.84. So the null hypothesis is rejected. Thus there was significant association between education and knowledge of newborn care.

Similar findings have been reported in a study conducted at South India. The results revealed that. Knowledge of mothers was inadequate in areas of umbilical cord care (35percent), thermal care (76 percent) and vaccine preventable diseases. Higher socio-economic status correlated with better neonatal care score. This could be because of the educational status of the mothers from higher socio economic class. Majority of the mothers (65.2 percent) 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<sup>12</sup>.

#### **CONCLUSION**

The findings revealed that the mean pre-test knowledge score was 13.1 and mean post-test score was 21.36. Chi-square test was used to analyse the association of knowledge with demographic variables which showed that there was no significant association between knowledge and demographic variables such as age, religion, occupation, type of family, family income & parity except the association between knowledge and education.

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