Effectiveness of Structured Teaching Programme on Knowledge, Attitude and Practices regarding Essential Newborn Care among Postnatal Mothers in a Selected Community, Kanchipuram District, Tamil Nadu, India

Gayathri K¹, Suvetha P², Abirami M³, AbishekB⁴, Amudha S⁵, Dr Veena M Joseph⁶*

1. IV Year, B.Sc Nursing, Department of Obstetrics and Gynecological Nursing, Chettinad College of Nursing, Chettinad Academy of Research and Education, Rajiv Gandhi Salai, Kelambakkam, Chengalpattu district, Tamil Nadu, India

2. IV Year, B.Sc Nursing, Department of Obstetrics and Gynecological Nursing, Chettinad College of Nursing, Chettinad Academy of Research and Education, Rajiv Gandhi Salai, Kelambakkam, Chengalpattu district, Tamil Nadu, India

3. IV Year, B.Sc Nursing, Department of Obstetrics and Gynecological Nursing, Chettinad College of Nursing, Chettinad Academy of Research and Education, Rajiv Gandhi Salai, Kelambakkam, Chengalpattu district, Tamil Nadu, India

4. IV Year, B.Sc Nursing, Department of Obstetrics and Gynecological Nursing, Chettinad College of Nursing, Chettinad Academy of Research and Education, Rajiv Gandhi Salai, Kelambakkam, Chengalpattu district, Tamil Nadu, India

5. IV Year, B.Sc Nursing, Department of Obstetrics and Gynecological Nursing, Chettinad College of Nursing, Chettinad Academy of Research and Education, Rajiv Gandhi Salai, Kelambakkam, Chengalpattu district, Tamil Nadu, India

6. Professor, Principal, Guide & Co-investigator, Chettinad College of Nursing, Chettinad Academy of Research and Education, Rajiv Gandhi Salai, Kelambakkam, Chengalpattu district, Tamil Nadu, India

*Corresponding Author: veenajoseph@chettinadhealthcity.com (Dr Joseph)

Abstract

Background: The mothers are the primary care takers of the newborns round the clock; it is an important priority to provide timely intervention to improve their knowledge and competency of essential newborn care thus ensuring healthy newborns. Materials and methods: The study aimed at assessing the effectiveness of structured teaching programme on knowledge, attitude
and practices regarding essential newborn care among postnatal mothers using a community based cross-sectional one group pre-test and post-test research design. The sample consisted of 50 postnatal mothers having a child within 6 weeks of birth, irrespective of parity and mode of delivery. A purposive sampling was used for selecting the mothers. The demographic profile of the postnatal mothers was assessed through a structured interview. The existing knowledge, attitude and practices of postnatal mothers regarding essential newborn care was assessed with the help of a self-administered Questionnaire, Opinionnaire and checklist respectively. A Structured teaching programme on essential newborn care was implemented and a post-test was conducted after 14 days. **Results:** The Study findings revealed that the post-test level of knowledge, attitude and practice of postnatal mother on essential newborn care was found to be statistically significant compared to the pretest levels at p<0.05. **Conclusion:** The structured teaching on essential newborn care was effective in improving the level of knowledge, attitude and practices of Essential Newborn care among the postnatal mothers.

**Key-words:** Essential Newborn Care, Effectiveness, Structured Teaching Programme, Knowledge, Attitude, Practice, Postnatal mother

Introduction

Essential newborn care is a global strategy, which is initiated by the health care providers and continued by the mother before conception, during pregnancy and soon after birth, and in the postnatal period to improve the health of newborns through interventions. [1]

Essential newborn care practices, as recommended by WHO to reduce neonatal morbidity and mortality include:

- Thermal care
- Cord care
- Eye care
- Exclusive breastfeeding
- Immunization
- Hygienic practices [2]

Globally, under-five and infant mortality rates have declined over the past four decades, but high neonatal mortality rates have remained relatively unchanged. About two thirds of all infant deaths occur during neonatal period. [3]

Approximately 5 million neonatal deaths occur annually in south East Asia. India accounts for 30% of world’s neonatal deaths. India’s current neonatal mortality rate of 44/1000 live births represents, 1.2 million Children who die every year. Neonatal mortality rate is higher in rural areas at 49/1000 live births. Tamil Nadu records 44 neonatal deaths/ 1000 live births. [4]

Statistics according to International Institute for Population Sciences 2006 reported that the neonatal mortality rate in India is 49 per 1000 live births, in Bangladesh 36 per 1000 lives, in
Srilanka 11 per 1000 live births, in Pakistan 57 per live births, in Nepal 40 per 1000 live births and in China 21 per 1000 live births. In U.S.A 5 per 1000 live births and U.K 4 per 1000 live births. [5]

WHO 2017 statistics showed that India’s current neonatal mortality is higher in rural areas at 49/1000 live births than in urban area at 27/1000 live births. Orissa has the highest neonatal mortality rate of 61/1000 live births. Karnataka, Uttar Pradesh, Madhya Pradesh, Tamil Nadu, West Bengal, Andhra Pradesh, Punjab have the neonatal mortality rate of 54/1000, 53/1000, 51/1000, 44/1000, 31/1000, 30/1000, 29/1000 live births respectively. Kerala has the lowest neonatal mortality rate of 10/1000 live births. [4]

Newborns most frequent caretaker is their own mothers and the mother’s knowledge and practice shapes the future of their new born. Thus poor knowledge on the part of mothers can lead to disastrous results in the field of care giving and well-being of the neonates. Providing timely education and intervention to the mothers could fill these gaps in knowledge of child care. [6]

It is necessary to assess the knowledge; attitude and practices of mothers who are going to take care of their newborn. This was the motivation for the student researchers to undertake this study. Hence the present study was undertaken to evaluate the effectiveness of structured teaching programme on knowledge, attitude and practices regarding Essential Newborn Care among Postnatal Mothers.

**Objectives of the study**

- Assess the existing level of knowledge, attitude and practices regarding essential newborn care among postnatal mothers.
Evaluate the effectiveness of structured teaching programme on the knowledge, attitude and practices regarding essential newborn care among postnatal mothers.

Correlate the knowledge with attitude and practices on essential newborn care among postnatal mothers.

Associate the pre-test level of knowledge, attitude and practices on essential newborn care with selected demographic variables of postnatal mothers.

Hypothesis

\( H_{01} \): There is no significant difference between pre-test and post-test knowledge, attitude and practices of postnatal mothers on essential newborn care.

\( H_{02} \): There is no significant correlation between the knowledge with attitude and practices of postnatal mothers on essential newborn care.

\( H_{03} \): There is no significant association between the knowledge, attitude and practices on essential newborn care with selected demographic variables of mothers.

Materials and methods

Research approach and design: A Quantitative research approach with a Community based cross-sectional one group pre-test and post-test design was found suitable for the study.

Research setting: The study was conducted in a selected community, kanchipuram district, Tamil Nadu, India.

Population: Population included all the mothers in the selected community, kanchipuram district, Tamil Nadu, India.
Sample: The mothers who had delivered in the last six weeks fulfilling the inclusion sampling criteria were the samples of the study.

Criteria for sample selection

Inclusion criteria:

- The postnatal mothers having a child within 6 weeks of birth.
- The postnatal mothers irrespective of their parity.
- The postnatal mothers irrespective of their mode of delivery.

Exclusion Criteria:

- The postnatal mothers whose neonate is at high risk or dead.
- The postnatal mothers with mental illness.

Sample size estimation: Formula for sampling proportion for finite population. \(^\text{[7]}\)

\[
\text{Sample size } (n) = \frac{Z^2 \times p \times (1-p)/d^2}{1 + \left(\frac{Z^2 \times p \times (1-p)/d^2}{N}\right)}
\]

\(n = \text{sample size with finite population}\)

\(Z = Z\text{ score for 95% level of confidence (1.96)}\)

\(P = 50\% \text{ population proportion assumption (0.5%)}\)

\(d = \text{margin of error} \pm 5\% (0.05)\)

\(N = \text{population size (50)}\)
Sample size (n) = 44

Keeping attrition rate as 15% (6.6). A sample size of 50 was considered for the study.

**Sampling technique:** A purposive sampling technique was used to select the normal postnatal mothers having a child within 6 weeks of birth.

**Research tool:** The research tools were developed based on literature review, as there is no standardized tool available to assess the effectiveness of structured teaching programme on knowledge, attitude and practices regarding Essential newborn care among postnatal mothers.

The research tool consisted of four sections

**Section– I:** Consists of part A and B

  Part A- A structured interview used to elicit the demographic profile of the Mother

  Part B- A structured interview used to elicit the Antenatal and birth history

**Section - II:** A self-administered structured questionnaire to assess the knowledge on Essential newborn care of postnatal mothers

The questionnaire consisted of 24 Questions to assess the knowledge regarding essential newborn care under seven aspects namely Components of Essential newborn care, Breastfeeding, Umbilical cord care, Immunization, Thermoregulation, newborn hygiene and prevention of diseases.

**Scoring:** Each question had 4 options with one correct answer carrying one mark , Maximum score on knowledge was 24.
Categorization of level of knowledge on Essential newborn care: On the basis of score attained, the level of knowledge was categorized as poor knowledge (Score 0-11), moderately adequate knowledge (Score 12-18) and adequate knowledge (Score 19-24).

Section-III: A self-administered structured opinionnaire was used to assess the attitude towards Essential newborn care of postnatal mothers using a five point likert scale (strongly disagree, disagree, not sure, agree, strongly agree)

Scoring: The opinionnaire consisted of 20 statements of which 8 were positive statements and 12 were negative statements.

Positive statements was scored as follows (strongly disagree=1, disagree=2, not sure=3, agree=4, strongly agree=5). The negative statements were reverse scored.

Maximum score was 100.

Categorization of level of attitude towards Essential newborn care: On the basis of score attained the level of attitude was categorized as Unfavorable attitude (score 0-49), moderately favorable attitude (Score 50-75) and highly favorable attitude (Score 76-100).

Section-IV: A Self- Administered checklist was used to assess the practices on Essential newborn care of postnatal mothers using a five point likert scale (Never=1, Seldom=2, Sometimes=3, Often=4 & Always=5)

Scoring: It consisted of 12parameters to assess the practices on Essential newborn care of postnatal mothers. Maximum possible score was 60.
Categorization of level of practices on Essential newborn care: On the basis of score attained in this section, the level of practices was categorized as Poor practice (Score 0-29), Moderate practice (Score 30-45) and Good practice (score 46-60).

Procedure for data collection

1. Obtained informed consent from the postnatal mothers
2. Assessed demographic variables of the postnatal mothers
3. Assessed the knowledge, attitude and practices regarding essential newborn care among postnatal mothers
4. Individual structured teaching provided to postnatal mothers on essential newborn care through lecture cum discussion method by using flash cards
5. Reassessed the knowledge, attitude and practices regarding essential newborn care among postnatal mothers on the 14th day after the structured teaching.

Ethical considerations: Informed consent was obtained from the postnatal mothers, anonymity and confidentiality was maintained during the study.

Data analysis: The data was analyzed and interpreted by descriptive and inferential statistics by using SPSS-20 software. Descriptive analysis was done to analyze the socio demographic data. Paired ‘t’ test was used to evaluate the effectiveness of structured teaching programme on Post-test level of knowledge, attitude and practices. Karl Pearson correlation co-efficient analysis was used to correlate the knowledge score with attitude and practice score. Pearson chi square test analysis was used to associate the post-test level of knowledge, attitude and practice score with selected demographic variables of mothers.
**Results and Discussion:** Fifty postnatal mothers were the study participants. Among them majority of the mothers (70%) were in the age group of 26-30 years. Nearly (36%) of mothers had higher secondary level of education. Majority of them (64%) were unemployed, 64% of mothers were Hindus, around (68%) of the mothers belonged to Nuclear family. More than half of the mothers (64%) were from lower income group and nearly (52%) of them received information on essential newborn care from family members. Majority of them (56%) were multiparous, while (62%) had a normal vaginal delivery. 58% of the newborns were males, 48% of infants were in the age group of 15-30 days and 100% of the infants received BCG, Oral Polio and Hepatitis B vaccines.

**Figure 1- Distribution of postnatal mothers by their pre-test and post-test level of knowledge on Essential newborn care**

Majority of the postnatal mothers (78%) had moderately adequate knowledge on essential newborn care in the pre-test. The mean pre-test knowledge score was 13.92 with a standard
deviation of $\pm 2.92$ respectively. In the post-test, majority of the postnatal mothers (58%) had adequate knowledge on essential newborn care. The mean post-test knowledge score was 19 with a standard deviation of $\pm 3.01$ respectively. [Figure 1]

The findings are supported by a study in North India which revealed that 97% of the postnatal mothers had poor knowledge in the pre-test and in the post-test 70% of the postnatal mothers gained adequate knowledge and 30% of postnatal mothers gained moderately adequate knowledge on essential new born care. [8]

**Figure 2- Distribution of postnatal mothers by their pre-test and post-test level of Attitude towards Essential newborn care**

Majority of the postnatal mothers, (80%) had moderately favorable attitude on essential newborn care in the pre-test. The mean pre-test attitude score was 63.94 with standard deviation of $\pm 12.45$ respectively. In the post-test, majority of mothers (56%) had highly favorable attitude on
essential newborn care. The mean post-test attitude score was 78.82 with standard deviation of ± 11.23 respectively. [Figure 2]

This finding was consistent with study in Nigeria reported that 52% had neutral attitude while the remaining 38% had negative attitude and only 10% had positive attitude on essential newborn care in the pre-test. While 54% had positive attitude, 36% had neutral attitude and 10% had negative attitude in the post-test. [9] Similarly another study in Nigeria found nearly 85% of postnatal mothers have positive attitude towards essential newborn care. [10]

Figure 3- Distribution of postnatal mothers by their pre-test and post-test level of Practices on Essential newborn care

Majority of postnatal mothers (70%) had moderate practices on essential newborn care in the pre-test. The mean pre-test practice score was 37.7 with standard deviation of ± 9.02 respectively.
In the post-test, majority of mothers (60%) had good practices on essential newborn care. The mean post-test practice score was 47.7 with standard deviation of ±7.81 respectively. [Figure 3]

The findings are concurrent to the study in Nigeria which found that 73% of mothers had poor practice and 27% had good practices in the pre-test. While 83% had good practices and 17% had poor practices on essential newborn care. [11]

**Table 1 - Distribution of effectiveness of structured teaching programme on the knowledge, attitude and practices Scores of Postnatal Mothers with Regard to Essential New Born Care**

<table>
<thead>
<tr>
<th></th>
<th>Pre-test Score</th>
<th>Post-test Score</th>
<th>‘t’ value</th>
<th>‘p’ value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Knowledge</td>
<td>13.92</td>
<td>2.92</td>
<td>19</td>
<td>3.01</td>
</tr>
<tr>
<td>Attitude</td>
<td>63.94</td>
<td>12.45</td>
<td>78.82</td>
<td>11.23</td>
</tr>
<tr>
<td>Practice</td>
<td>37.7</td>
<td>9.02</td>
<td>47.7</td>
<td>7.81</td>
</tr>
</tbody>
</table>

*significant at p<0.05

The pre-test mean of knowledge, Attitude and Practice score was 13.92, 63.94 & 37.7, while post- test mean knowledge, Attitude and Practice score was 19, 78.82 & 47.7 respectively. The findings imply that the structured teaching programme had a significant effect in improving the knowledge, attitude and practice among postnatal mother regarding essential newborn care. [Table 1]

The findings are similar to the study in Karnataka which reported that post-test score are significantly higher than the pre-test score after the structured teaching programme. It was proved that direct education can lead to increase in the level of knowledge, attitude and practices.
related to essential new born care. Consequently, hypothesis \( H_0 \) is not accepted. There is a significant difference in the pre-test and post-test level of knowledge, attitude and practice of postnatal mother on essential newborn care. \( p < 0.05 \)

**Table 2 - Correlation between Knowledge with Attitude and Practices of postnatal mothers with regard to Essential new born care.**

<table>
<thead>
<tr>
<th>Pre-test Score</th>
<th>Post-test Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Knowledge</td>
<td>13.92</td>
</tr>
<tr>
<td>Attitude</td>
<td>63.94</td>
</tr>
<tr>
<td>Knowledge</td>
<td>13.92</td>
</tr>
<tr>
<td>Practices</td>
<td>37.7</td>
</tr>
<tr>
<td>Attitude</td>
<td>63.94</td>
</tr>
<tr>
<td>Practices</td>
<td>37.7</td>
</tr>
</tbody>
</table>

To test significant correlation between knowledge with attitude and practice, Pearson correlation coefficient was calculated which revealed a strong positive correlation \( (r=0.7696 \& p=0.00073) \) between the Pre-test Knowledge and Attitude Scores of Postnatal Mothers and strong positive correlation \( (r=0.8263 \& p=0.00001) \) between the Post-test Knowledge and Attitude Scores of Postnatal Mothers with Regard to Essential New Born Care.

There was a strong positive correlation \( (r=0.77 \& p=0.0021) \) between the Pre-test Knowledge and practices Scores of Postnatal Mothers and moderate positive correlation \( (r=0.6426 \& p=0.0052) \) between the Post-test Knowledge and practices Scores of Postnatal Mothers with Regard to Essential New Born Care. There was a strong positive correlation \( (r=0.7803 \& p=0.00049) \) between the Pre-test Attitude and practices Scores of Postnatal Mothers and strong positive
correlation ($r=0.8926$ & $p=0.00001$) between the Post-test Attitude and practices Scores of Postnatal Mothers with Regard to Essential New Born Care. Hence null hypothesis $H_{02}$ is strongly rejected. [Table 2]

The findings are similar to the study in Ghana which showed that there was a positive correlation between knowledge with attitude and practices on essential newborn care (spearman’s correlation, $p$-value= 0.000, 0.003 & $r= 0.62, 0.75$). [13] This finding slightly differs from the Sri Lankan study which found that a significant correlation between practice and attitude but no significant correlations were found for knowledge with practice or attitude. [14]

Table 3– Association of selected demographic variables with Pre-test level of knowledge, Attitude and Practices Scores of postnatal mothers with regard to Essential new born care.

<table>
<thead>
<tr>
<th>S. no</th>
<th>Demographic Variables</th>
<th>Knowledge Score</th>
<th>Attitude Score</th>
<th>Practice Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Calculated $\chi^2$ value</td>
<td>Tabulated $\chi^2$ value</td>
<td>Calculated $\chi^2$ value</td>
</tr>
<tr>
<td>2.</td>
<td>Educational Status</td>
<td>34.98</td>
<td>18.31*</td>
<td>19.44</td>
</tr>
<tr>
<td>4.</td>
<td>Religion</td>
<td>0.99</td>
<td>5.99</td>
<td>1.42</td>
</tr>
<tr>
<td>5.</td>
<td>Family Type</td>
<td>7.46</td>
<td>5.99*</td>
<td>9.49</td>
</tr>
</tbody>
</table>

*Significant at $p<0.05$
A statistically significant association found between pre-test level of knowledge regarding essential newborn care of postnatal mothers with educational status (34.98), family type (7.46), Source of information (15.88) and parity (6.49) at 5% level of significance (p<0.05). The other demographic variables are not associated with knowledge.

A statistically significant association found between pre-test level of attitude regarding essential newborn care of postnatal mothers with age (12.25), educational status (19.44), employment status (6.60), family type (9.49) and parity (7.99) at 5% level of significance (p<0.05). The other demographic variables are not associated with attitude.

A statistically significant association found between pre-test level of practices regarding essential newborn care of postnatal mothers with age (9.96), family type (6.71) and parity (7.26) at 5% level of significance (p<0.05). The other demographic variables are not associated with pre-test level of practices regarding essential newborn care of postnatal mothers. Hence null hypothesis H₀ is partially rejected. [Table 3]

The findings of the study were similar to the study in Gbarantory Community which found that there was a strong association between age, parity, sex of the child with postnatal mothers’ knowledge, attitude and practice. [15] The findings in our study were consistent with study in Sri Lanka which showed no association between antenatal care visits and maternal knowledge. [16] The findings are contrast to the study in Uganda which found that the educational status of the mothers was found to be positively associated with knowledge and practice on essential newborn care. [17]
Conclusion: This study concludes that the structured teaching program on essential newborn care was effective in improving the level of knowledge, attitude and practices of essential newborn care among postnatal mothers.

Acknowledgement: The Authors are grateful to all the mothers who participated in the study.

Declarations

Ethical Approval: Ethical Approval obtained from Institutional Human Ethics Committee.

Conflicts of interest : Nil

Source of funding : Self

References


