

# Effectiveness of prenatal education programme on postnatal and newborn care

## Abstract

**Introduction:** Mothers and children are the half of the total population in India. All the maternal death in Asia is mainly due to high population density, poverty, low female literacy and poor health services. Main objectives of the study to evaluate the effectiveness of Prenatal Education Programme on Postnatal and Newborn care, and to associate the post-test level of knowledge, attitude and knowledge on practice on postnatal and newborn care among the mothers.

**Methodology:** The Quantitative pre-experimental one group (Pre and Post-test) research design was used. The sample size was 100 prenatal mothers, which were selected by using the purposive sampling technique who fulfilled the inclusion criteria at selected hospitals, Puducherry. Data was collected by using structured interview schedule method. Post test was done after 7<sup>th</sup> day of intervention at any time during postnatal period with the same tool.

**Results and discussion:** The results depicts that 41(41%) mothers were at the age group of 21-25 years, 78(78%) mothers were belonged to joint family, 46(46%) mothers were graduate, 62(62%) mothers were primi mothers, 49(49%) mothers were on 2<sup>nd</sup> day of postnatal period and 50(50%) had previous knowledge on postnatal and newborn care and the pre and post – test score of knowledge, attitude and knowledge on practice on Postnatal and Newborn Care among the mothers were 19.42±7.08, 73.09±9.25, 11.83±3.95, 34.75±4.67, 92.24±6.32 and 18.0±2.25 respectively. The calculated ‘t’ value for knowledge and attitude level on Postnatal and Newborn Care respectively -29.64 & -21.76 which was found to be statistically significant at p<0.001 level. There is positive correlation between knowledge and attitude (r=0.059), Knowledge and knowledge on practice (r=0.245) and attitude and knowledge on practice (r=0.139). The demographic & obstetrical variables of mother’s age, parity, no. of living child, no. of postnatal day, previous knowledge and sources of information about Postnatal and Newborn Care had shown highly significant association at p level <0.001 and <0.05 with post-test level of knowledge, attitude and knowledge on practice regarding Postnatal and Newborn Care

**Conclusion:** This showed that prenatal education programme was more effective and it can be promoted in prenataly by nurse in their day to day activities in hospital setting.

**Keywords:** prenatal education programme, postnatal and newborn care

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A Alageswari,<sup>1</sup> Manju Bala Dash,<sup>2</sup> Felicia Chitra A<sup>3</sup>

<sup>1</sup>MSc Nursing–Obstetrics and Gynaecology, MTPG & RIHS, India

<sup>2</sup>HOD & Department of OBG, MTPG & RIHS, India

<sup>3</sup>Principal cum Research Guide, MTPG & RIHS, India

**Correspondence:** Prof. DR. Manju Bala Dash, HOD & Department of OBG, MTPG & RIHS, Puducherry, India, Tel 9894330940, Email manju\_naraya@rediffmail.com

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## Introduction

Mothers and children are the half of the total population in India. One of the best moments in the women’s life is giving birth to the baby. Postnatal period begins immediately after the childbirth or starts about an hour after the delivery of the placenta and extends upto 6–8 weeks. The care includes both the mother and her newborn after delivery.<sup>1</sup>

The postnatal period termed as the fourth stage of labour because it starts after the third stage of labour and ends at first six weeks after delivery. At this time, the reproductive organs slowly return to the normal size and shape. It is the crucial time for the mothers and newborns because at this time there will be lot of physiological and emotional changes used to occur. Postnatal care is the vital portion of maternal health care as it helps to identify the health status of the mother and newborn, and essential to solve the health issues of the baby’s progress. It also assists to yield mandatory information and education to mothers about maternal and newborn care.<sup>2</sup>

The healthy newborn infant born at term, between 38 weeks to 42

weeks, cries immediately after birth, establishes independent rhythmic respiration, quickly adapts with the extra – uterine environment, and has an average birth weight and no congenital anomalies.<sup>3</sup> Many newborns are born with average birth weights, although various health problems make the neonates ‘at risk’. The morbidity and mortality rates of newborns are high. They require the optimal care for better survival. Now a days, neonatal care is highly cost–effective because life–saving of newborn baby is associated with survival and productivity of the future adult. Even though, the parents are the ultimate persons mainly response for this care.<sup>4</sup>

The postnatal care services include postnatal visits, identification of complications and its managements of mother’s and newborn during postnatal period and referral services when it was needed, promotion of exclusive breastfeeding, personal hygiene, education about nutritional supplements, postnatal vitamin A and iron supplementation for mothers, immunization of newborns and family planning counselling and services for both mother and father.<sup>5,7,8</sup> WHO components of essential newborn care practice includes cord care, breast feeding, and thermoregulation, eye care, and immunization, management of birth

asphyxia & recognition of danger signs with special emphasis on the care of low birth weight infants.<sup>6-8</sup>

The government released the latest MMR, as calculated by the Sample Registration Survey which is the most regular source for demographic statistics in India. The current MMR of India had declined 22% over three years, from 167 maternal deaths per 100000 live births in 2011–13 to 130 deaths per 100000 live births in 2012–16.<sup>9</sup>

Mothers and infants are the two vulnerable groups of society. One of the millennium development goals is to improve the health of them and to reduce the maternal mortality and postpartum complications. Approximately 600000 women die in worldwide due to pregnancy related complications and 99% of these deaths occur in developing countries. And also there have been more than 50% cases reported during the postpartum period. In this period, the mothers experienced different kind of problems that includes bleeding, genital infections, uterine prolapse, depression, haemorrhoids, urinary incontinence, secondary infertility, pelvic inflammatory disease, perineal injury, breast problems, back pain, and pain during intercourse. In this regard, a study by Rouchi, et al, 2010, showed that 91.6%, 90.3%, and 83.5% of mothers reported that at least one problem at one week, six weeks, and 12 months following delivery respectively. Many of these problems could be resolved through and raising awareness.<sup>10</sup>

The care of newborn health challenge faced by India is more dreadful than that experienced by any other country in the world. It is estimated out of 3.9 million neonatal deaths that occur worldwide almost 30% occur in India. The major causes of neonatal deaths globally were estimated that prematurity (28%), sepsis and pneumonia (26%), birth asphyxia and injuries (23%), tetanus (7%), congenital anomalies (7%) and diarrhoea (3%).<sup>11</sup>

Health education is a vital task of nursing staffs or every individual in hospital settings. It is a potential and actual remedy to treat and prevent the illness. If, the health education was imported with huge awareness to the mothers by health workers that enrich the knowledge, attitude and modify the behaviour of the mother. Health education encourage the mothers to alter the behaviour and stopping down the misconceptions of wrong practices. This can be applicable for both rich and poor, educate and illiterate, & sick and healthy mothers. Health education can be done efficiently with the Audio-visual Aids. According to, Chinese proverb, "If you hear, you forget, if you see, you know and if you do, you remember". There are different methods of AV Aids available, in that commonly used method in hospital settings was video-assisted teaching and projected Aids which arouse the interest of the mother. Even illiterate mother can easily understand and acquire the knowledge about the care of mother as well as newborn.<sup>12</sup>

The investigator during her clinical posting personally experienced that postnatal mothers had lack of awareness regarding postnatal and newborn care. So, there is a need for educational program and this will help the mothers to gain awareness and helps to avoid the traditional practices like applying oil on cord stump, giving the sugar water and not maintaining proper hygienic and food practices that also contribute to reduce the maternal and newborn risk of mortality and morbidity.

### Objectives of the study

a. To assess the existing level of knowledge, attitude and knowledge on practice regarding Postnatal and Newborn Care among the mothers during antenatal period.

b. To assess the level of knowledge, attitude and knowledge on practice regarding Postnatal and Newborn Care among the mothers after the interventions during the postnatal period.

c. To evaluate the Effectiveness of Prenatal Educational Program (PEP) on Postnatal and Newborn Care among the mothers.

d. To correlate between the level of knowledge and attitude, knowledge and knowledge on practice and attitude and knowledge on practice among the mothers.

e. To associate the post-test level of knowledge, attitude and knowledge on practice with the selected demographic and obstetrical variables.

### Methodology

The quantitative pre – experimental one group (Pre and Post-test) research design was used to conduct research at a selected hospital Puducherry. The sample size was 100 mothers and they were selected by purposive sampling for the study, who fulfilled the inclusion criteria such as mothers who were admitted in antenatal ward at 39–42 weeks of gestation for safe confinement, as planned for elective caesarean section and willing to participate in the study, the mothers who were with obstetrical emergencies and with mental disorders were excluded in this study. Structured questionnaire was used to collect the data. The interview schedule comprised of A, B, C & D sections. Section A consisted of demographic and obstetric variables of mothers, section B comprised of knowledge questionnaire, Section C encompassed of five point likert scale to assess the attitude of mothers and Section D contained check list of knowledge on practice on postnatal and newborn care. Written and oral informed consent obtained from each mother prior to the data collection. Pre-test data collected during the antenatal period at any day between 1<sup>st</sup> to 3<sup>rd</sup> day of the admission. Interventions planned on the same day of pre-test which consisted of postnatal care, early ambulation, mother's nutrition, rest and sleep, hygiene, family planning, breastfeeding, cord care, eye care, skin care, immunization, danger sign of mother and newborn, & follow-up for both mother and newborn. The post-test was carried out with the same tool by using the structured interview schedule after 7<sup>th</sup> day of interventions during the postnatal period at any day between 1<sup>st</sup> to 4<sup>th</sup> day of postnatal day. The collected data was planned to analyse by using descriptive and inferential statistics.

### Results

The results showed that majority 41(41%) mothers were in the age group of 21–25 years, 94 (94%) mothers were Hindus, 78(78%) mothers belonged to joint family, 60(60%) mothers were living in rural area, 46 (46%) mothers had education upto graduation, 97(97%) mothers were housewife, 61(61%) mothers were had family income of < Rs. 5000, 50 (50%) mothers had previous knowledge and 50 (50%) mothers had no previous knowledge on postnatal & newborn care and 31(31%) of mothers got the information from their family members, 62 (62%) mothers were primi paras, 66(66%) of mothers had vaginal delivery, and 49(49%) mothers were on 2<sup>nd</sup> day of postnatal period (Table 1).

The mean pre-test knowledge score was 19.42±7.08 and the mean post-test knowledge score was 34.75±4.67. The calculated paired 't' value (t = - 29.64) was found to be statistically significant at p<0.001 level. The mean pre-test level of attitude was 73.09±9.25 and the mean post-test level of attitude was 92.24±6.32. The calculated paired 't' value (t = - 21.76) was found to be statistically significant

at  $p < 0.001$  level. The mean pre-test knowledge on practice score was  $11.83 \pm 3.95$  and the mean post-test knowledge on practice score was  $18.0 \pm 2.25$ . The calculated paired 't' value ( $t = -13.87$ ) was found to be not significant at  $p < 0.05$  level. This clearly states that Prenatal Education Programme (PEP) on Knowledge, Attitude and Knowledge on Practice regarding Postnatal and Newborn Care to the mothers had significant improvement in their post-test level (Table 2).

**Table 1** Distribution of demographic and obstetrical variables among the mothers

Demographic variables	Frequency (n)	Percentage (%)
<b>Age in years</b>		
<20 Years	14	14
21-25 Years	41	41
26-30 Years	36	36
31-35 Years	7	7
36-40 Years	2	2
<b>Religion of the mother</b>		
Hindu	94	94
Christian	5	5
Muslim	1	1
<b>Educational status of the mother</b>		
Primary Education	11	11
Secondary Education	22	22
Higher Education	21	21
Graduation	46	46
Illiteracy	0	0
<b>Occupational status</b>		
House Wife	97	97
Daily Labour	2	2
Professional	1	1
<b>Monthly income of the family</b>		
<Rs.5000	61	61
Rs.5001-7000	15	15
Rs.7001-10000	11	11
>Rs.10000	13	13
<b>Type of the family</b>		
Nuclear Family	22	22
Joint Family	78	78
<b>Residence of the mother</b>		
Rural	60	60
Urban	40	40
<b>Previous knowledge of postnatal and newborn care</b>		
Yes	50	50
No	50	50

Table Continues...

Demographic variables	Frequency (n)	Percentage (%)
<b>Sources of information</b>		
Family Members	31	31
Neighbours	2	2
Social Media	1	1
Health Care Provider	16	16
Nil	50	50
<b>Parity</b>		
Primipara	62	62
Multipara	38	38
<b>No. of living child</b>		
Nil	62	62
1	37	37
2	1	1
<b>History of abortion</b>		
Yes	10	10
No	90	90
<b>Nature of delivery</b>		
Vaginal Delivery	66	66
Caesarean Section	34	34
<b>Post -natal day</b>		
1 Day	5	5
2nd Day	49	49
3rd Day	43	43
4th Day	3	3

N = 100

**Table 2** Comparison of pre-test and post-test level of knowledge, attitude and knowledge on practice score on postnatal and newborn care among the mothers

Variables	Mean	Standard deviation	'paired- t' test	'p' value
Pre-test level of Knowledge	19.42	7.08		
Post-test level of Knowledge	34.75	4.67	-29.64	.000**(S)
Pre-test level of Attitude	73.09	9.25		
Post-test level of Attitude	92.24	6.32	-21.76	.000**(S)
Pre-test level of Knowledge on Practice	11.83	3.95		
Post-test level of Knowledge on Practice	18	2.25	-13.87	0.613 (NS)

N = 100

The correlation between mean post-test knowledge score was  $34.75 \pm 4.67$  and the mean post-test level of attitude was  $92.24 \pm 6.32$ . The calculated Karl Pearson's Correlation value ( $r=0.059$ ) showed that positive correlation which was found to be not statistically significant at  $p < 0.05$  level. The correlation between mean post-test level of attitude was  $92.24 \pm 6.33$  and the mean post-test knowledge on practice score was  $18.0 \pm 2.24$ . The calculated Karl Pearson's Correlation value ( $r=0.245$ ) showed that positive correlation which was found to be statistically significant at  $p < 0.05$  level. The correlation between the mean post-test knowledge score was  $34.75 \pm 4.67$  and the mean post-test knowledge on practice score was  $18.0 \pm 2.24$ . The calculated Karl Pearson's Correlation value ( $r=0.139$ ) showed that positive correlation which was found to be not significant at  $p < 0.05$  level. This results indicated that when the mothers had positive attitude regarding Postnatal and Newborn Care which helps the mothers to follow good practice (Table 3).

Mother's previous knowledge, sources of information about Postnatal and Newborn Care, parity, and no. of living child, all these variables had shown highly significant association at p level  $< 0.001$ . Age of the mother, no. of abortion, and no. of postnatal day all these variables had shown significant association at p level  $< 0.05$ . The variable parity had shown significant association at p level  $< 0.05$ .

Other demographic and obstetrical variables had not shown significant association with post-test level of attitude regarding Postnatal and Newborn Care among the mothers (Table 4).

**Table 3** Correlation between post-test level of knowledge & attitude, attitude & knowledge on practice and knowledge & knowledge on practice on postnatal and newborn care among the mothers

Variables (Post-Test)	Mean	Standard deviation	'r' Value	'p' Value
Level of Knowledge	34.75	4.67	0.059	0.557
Level of Attitude	92.24	6.32		
Level of Attitude	92.24	6.33	0.245	.014*
Level of Knowledge on Practice	18	2.24		
Level of Knowledge	34.75	4.67	0.139	0.169
Level of Knowledge on Practice	18	2.24		

N = 100

\*-  $p < 0.05$  Significant

**Table 4** Association of post-test level of knowledge, attitude and knowledge on practice with selected demographic and obstetrical variables

Demographic & obstetrical variables	Post- test level of knowledge				$\chi^2$	Df	p-Value
	Moderate		Adequate				
	N	%	N	%			
<b>Previous knowledge on postnatal and newborn care</b>							
Yes	2	4	48	96	20.38	1	0.000**
No	21	42	29	58			
<b>Sources of information</b>							
Family Members	2	6.5	29	93.5	20.66	4	0.000**
Neighbours	0	0	2	100			
Social Media	0	0	1	100			
Health Care Provider	0	0	16	100			
Nil	1	42	29	58			
<b>Parity</b>							
Primipara	1	33.9	41	66.1	10.89	1	0.001**
Multipara	2	5.3	36	94.7			
<b>No. of living child</b>							
Nil	2	35.5	40	64.5	14.36	2	0.001**
1	1	2.7	36	97.3			
2	0	0	1	100			
Demographic & obstetrical variables	Post- test level of attitude				$\chi^2$	Df	p-Value
	Agree		Strongly agree				
	N	%	N	%			
<b>Age In Years</b>							
<20 Years	5	35.7	9	64.3	9.561	4	0.049*
21-25 Years	3	7.3	38	92.7			
26-30 Years	4	11.1	32	88.9			
31-35 Years	0	0	7	100			
36-40 Years	0	0	2	100			

Table Continues...

Demographic & obstetrical variables	Post- test level of knowledge on practice				$\chi^2$	Df	p-Value
	Moderate		High				
	N	%	N	%			
<b>Parity</b>							
Primipara	21	33.9	41	66.1	3.908	1	0.048*
Multipara	6	15.8	32	84.2			

N=100

\*- p&lt;0.05 Significant, \*\*- p&lt;0.001 and \*\*\*- p&lt;0.0001 Highly Significant

## Discussions

The results showed that majority of mothers were in the age group of 21–25 years, Hindu religion, belonged to joint family, were living in rural area, had education upto graduation, were housewife, had family income of <Rs. 5000, primi paras, had vaginal delivery, and n 2<sup>nd</sup> day of postnatal period.

The results highlight in pre-test the majority of 67(67%) mothers had moderately adequate knowledge, and the least 4(4%) had adequate knowledge. In pre-test attitude, the majority of 90(90%) mothers had positive attitude, and the least 1(1%) had negative attitude. In pre-test knowledge on practice, the majority of 65(65%) mothers had moderate knowledge on practice, and least 5(5%) had good knowledge on practice.

The present study was supported with the study conducted by Sahbanathul Missiriya, 2016, who revealed that 42(70%) had inadequate knowledge, 18(30%) had moderately adequate and none of them had adequate knowledge. About their practice, 38(63.3%) had poor practice, 22(36.7%) had moderate practice and none of them had good practice on Postnatal and Newborn Care.<sup>2</sup>

The present study was supported with the study conducted by C. Muthulakshmi, 2016. The results revealed that overall postnatal practice mean score among the primi, LSCS and multi on 1<sup>st</sup> postnatal day regarding the breast care were 22.6 with “t” value 14.92 (p<0.01) were highly significant in the experimental than control group. Overall mean score of breast care on 3<sup>rd</sup> day were 23.6 with ‘t’ value 39.5(p<0.01) and mean score of breast feeding technique on 3<sup>rd</sup> day were 23.7 with ‘t’ value 15.83 (p<0.01) were highly significant in experimental than control group.<sup>13</sup>

The present study was supported with the study conducted by Thenmozhi P,et al, (2017) The study results revealed that 16(26.7%) had inadequate knowledge, 30(50%) of them had moderately adequate knowledge and 14(23.3%) of them had adequate knowledge. In practice 16(26.7%) had poor practice, 28(46.7%) had good practice and 16(26.6%) had best practice. There is a positive correlation between the level of knowledge and practice on essential newborn care.<sup>14</sup>

Another study conducted by Darling .B.Jiji, et al (2014) which was supported the present study. Findings of the study showed that 65% of postnatal mothers had moderate knowledge, 61% had favourable attitude and 57% of them had high practice of newborn care. There is significant correlation between knowledge and attitude (r=+0.567), knowledge and practice (r=+0.388), attitude and practice (r=+0.321).<sup>15</sup>

The present was supported with the study conducted by Nalaka Dayaratne and Girly de Silva, 2016, revealed that the level of knowledge on newborn care was significantly associated with the

educational level, parity and having one or more children.<sup>16</sup> Another study conducted by Pradhan. A and Rani. U, 2017, the results indicated that there was significant association between the mother’s parity and level of practice at p level <0.05.<sup>17</sup>

## Limitations

The researcher used interview schedule method for each individual mother which was more time consumed.

## Conclusion

The study results indicated that out of 100 mothers, post-test depicts that 77(77%) of mothers had adequate knowledge, 23(23%) of mothers had moderately adequate knowledge, 100(100%) of mothers had positive attitude, 78(78%) of mothers had good knowledge on practice and 22(22%) of mothers had moderate knowledge on practice. This was proved that the effectiveness of prenatal education programme on Postnatal and Newborn Care among the mothers. All the mothers in the post-test had increased knowledge, positive attitude and good knowledge on practice. So, this method of teaching programme on Postnatal and Newborn Care among the mothers can be promoted in prenatally by nurse in their day to day activities in hospital settings.

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## Conflicts of interest

The authors declare there is no conflict of interests.

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