



EFFECTIVENESS OF NEONATAL CARE PACKAGE ON KNOWLEDGE AND PRACTICE REGARDING NEWBORN CARE AMONG PRIMIGRAVID POSTNATAL MOTHER.

Paediatrics

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ABSTRACT

Introduction: Infection is fairly common in neonates. Even if they are born with an average birth weight, they are at risk for a variety of health concerns. Newborns have a high rate of illness and mortality, and they require the best possible care to improve their chances of survival. **Aim:** The purpose of this study was to assess the effectiveness of neonatal care package on knowledge and practice regarding newborn care among primigravid postnatal mothers. **Method:** One group pretest posttest research design was used to assess the effectiveness of neonatal care package on knowledge and practice regarding newborn care among primigravid postnatal mothers. The 60 primigravid postnatal mothers who fulfilled the eligibility criteria were chosen by using purposive sampling. Self administered knowledge questionnaire and Checklist was created to gather the information. **Result:** Highest 48.3% of the women belonged to the age of 24-29. The pre-test and post-test level of practice score mean difference in mummification 6, breast feeding practice 16, hand washing procedure 13, and the overall 12. The obtained r value 0.599 is greater than 0. Therefore r value indicates strong positive correlation between the knowledge and practice before and ($r = -0.14$) and after ($r = 0.599$) the administration of neonatal care package. The pre-test mean score of knowledge was 10.8 with SD 3.86 whereas the post-test mean score of knowledge was 22.7 with SD 1.49 and the post-test mean score of practice was 35.45 with SD 1.65. **Conclusion:** Hence, The study concluded that Neonatal care package was very effective and had a significant effect on knowledge and practice regarding neonatal care. Therefore the intervention tool can be utilized by the health care professional in their practice at the community level.

KEYWORDS

Neonatal Care Package, Knowledge, Practice, Postnatal Mothers.

INTRODUCTION

The health of future children is determined by the family's nurturing practises. The first few days of life are a period of abrupt transition from parasitic foetal life (intra uterine environment) to fully independent life (extra Uterine life). The process of birth and acclimating to a new environment is dependent on a variety of adaptations, particularly on the part of the newborn baby.¹ The neonatal phase lasts from birth to 28 days, and the infant during this time is known as a neonate or newborn baby. Neonatal care is extremely cost-effective since saving the life of a newborn baby is linked to the future adult's survival and productivity. Because they are the foundation of life, newborn care is prioritised in order to reduce neonatal illness and deaths by preventing infections such as septicemia, meningitis, umbilical sepsis, and neonatal tetanus, which can lead to birth asphyxia. Lack of understanding and practise of mothers on pregnancy and postnatal care, especially infant care, are factors that contribute to neonatal infection.² The "neonatal period" is defined as the first four weeks of life. Breathing, warmth, cleanliness, and mother's milk are the optimum basic necessities for any baby born. Then, to prevent disease and enhance growth and development, all new born babies require important new born care.³ Clearly, proper infant care will aid in the prevention of many newborn emergencies. For example, the umbilical cord may be the most prevalent source of neonatal sepsis and tetanus infection, and proper cord care could drastically lower the risks of these dangerous illnesses. Breastfeeding has a considerable anti-infection impact. Hypothermia and hypoglycemia are reduced when the baby is breastfed early and kept close to the mother.³ New born period is the most vulnerable phase of life and death during first 28 days of life account for over 60% and 40% of all death of children under 5 years. It is estimated that 3.9million neonatal deaths occur almost 30% India. The basic features and components of primary new born care have been well defined and accepted for delivery.⁵ Promoting health at home and within the wider community play an essential part in the reduction of children's morbidity and mortality rate. Maternal and child health services in rural areas of India are delivered mainly by government-run Primary Health Centres and sub-centres. In urban areas, such services are available mainly through government or municipal hospitals, urban health posts, hospitals and nursing homes operated by nongovernmental organizations (NGOs), and private nursing homes and maternity homes.⁶ New born care at primary level is a package known and described as an essential new born care. It aims to assist the new born in establishment of cardio respiratory effort, prevention of hypothermia and maintenance of body temperature,

early initiation of successful breast feeding and appropriate care for newborn.⁷ The principles of essential newborn care is simple, requiring no expensive high technology equipment. What is required is resuscitation, warmth to avoid hypothermia, early breastfeeding, hygiene, support for the mother infant relationship and early treatment for low birth weight or sick infants.⁸ Promotion of essential newborn care practices is one strategy for improving newborn health outcomes. In settings where a majority of births take place at home without a skilled attendant and care seeking rates are low, preventive interventions included in essential newborn care should also be promoted at the community level. For example, promotion of preventive behaviour through home visits by community health workers has been shown to improve key newborn care practices such as early initiation of breastfeeding, skin-to-skin contact, delayed bathing to prevent hypothermia, and clean care of the umbilical cord.⁹ Best practices of newborn care that includes maintenance of temperature, exclusive breast feeding, skin care, eye care, cord care, prevention of infection, immunization and identification of danger signs. Hence, as a first step the researcher felt the need for assessing the knowledge and practices of postnatal mothers with regards to essential newborn care.¹⁰ Mother plays a key role in identifying minor developmental deviations and early evidence of disease process because she is constantly and closely watching her baby. Participation of mother in the nursing care of baby infuses self confidence in her and reduces demands on nursing personnel. So she needs the basic knowledge and skills pertaining to child feeding, personal hygiene, immunization and other common problems in children.¹¹ It is evident through several studies that mothers have average to poor knowledge on newborn care. In India, a similar study reveals that mothers have inadequate knowledge in areas of umbilical cord care, thermal care and vaccine preventable diseases. This poor awareness among mothers can lead to unsuccessful results in terms of care giving. A number of research studies show that home visits by providers trained to deliver simple, effective interventions can improve key newborn care practices, care-seeking and, in high mortality settings, reduce newborn mortality.¹² A cross sectional study was conducted among 600 mothers in Government General Hospital Kakinada to assess the knowledge of infant feeding practices. Semi structured questionnaire was used to collect the data. Result showed that 81% of mother are belong to Hindu religion, 64% belong to nuclear family, 50% of mothers were working and 49% mothers belonged to low socio economic status. 42.7% mother did not know about exclusive breast feeding and 20.6% of mothers had awareness regarding introduction of complementary

feeds.¹³ Since mothers are the primary care takers of the newborn round the clock, it is the most important priority to improve their knowledge and competency. If a mother is educated, she can educate the entire family and the community as an educator.¹⁴ So, investigators felt that it is necessary, to conduct study on primi gravid mothers to enhance their knowledge and practice care related to essential newborn care.

OBJECTIVES OF THE STUDY:

The objectives of the study were to:

- Determine the effectiveness of neonatal care package by comparing mean of knowledge and practice scores of the primigravid postnatal mothers regarding newborn care before and after administration of intervention.
- Find the correlation between the pre-test and post-test knowledge scores with practice scores of the primigravid postnatal mothers regarding newborn care.
- Determine the association between pre-test knowledge and practice scores of primigravid postnatal mothers regarding newborn care with their selected demographic variables.

HYPOTHESES

H₁: There will be a significant difference in the knowledge scores of primigravid postnatal mothers on newborn care before and after the administration of neonatal care package.

H₂: There will be a significant difference in the practice score of primigravid postnatal mothers on newborn care before and after the administration of neonatal care package.

H₃: There will be a significant positive correlation between knowledge score and practice score of primigravid postnatal mothers on newborn care at $r > 0$.

H₄: There will be a significant association between knowledge of primigravid postnatal mothers on neonatal care package with their selected demographic variables

H₅: There will be a significant association between practices of primigravid postnatal mothers on neonatal care package with their selected demographic variables.

RESEARCH APPROACH:

In research approach the data was collected and it was analyzed. In view of the nature of the problem, understudy Quantitative approach had been adopted.

RESEARCH DESIGN:

A pre-experimental (one group pre-test and post-test) design was adopted for the study.

The pre-experimental design chosen for the study is described below:

Study group	(O1)	(X)	(O2)
60 primigravid postnatal mothers from the rural area were selected to assess the effectiveness of neonatal care package.	Administration of structured knowledge questionnaire and observational checklist on newborn care practice	Administration of neonatal care package.	Administration of structured knowledge questionnaire and observational checklist on newborn care practice

Key:

O1 – Pre-test administration on knowledge and practice of the primigravid postnatal mothers regarding newborn care by structured knowledge questionnaire and observational checklist.

X – Neonatal care package and demonstration on neonatal care package.

O2 – Post-test on knowledge and practice of primigravid postnatal mothers on newborn care by structured knowledge questionnaire and observational checklist.

VARIABLES:

1. Independent variable: In this study, independent variable was neonatal care package on newborn care.

2. Dependant variable: In this study, dependant variables were knowledge and practice of primigravid postnatal mothers on newborn care.

3. Extraneous variables: In this study extraneous variables were demographic variables.

SETTING OF THE STUDY:

The study was conducted in the villages Nuna Majra, Daboda, Lawa Khurd and Chhara coming under CHC Chhara, Haryana.

POPULATION:

The population for the study considered the primigravid postnatal mothers staying in selected villages of CHC Chhara, Haryana.

Target population:

In this study, the target population was primi postnatal mothers with 18-38 years of age, staying in selected villages of CHC Chhara, Haryana.

Accessible population:

In this study, accessible population was primigravid postnatal mothers those who were registered under CHC Chhara.

SAMPLE AND SAMPLING TECHNIQUE

Sample:

The sample considered of primi gravid postnatal mothers who meet the inclusion criteria.

Sample size:

In the present study 60 women who fulfilled the sampling criteria were selected as the sample.

Sampling technique:

A non-probability purposive sampling technique was adopted for this study.

Data Collection tool:

The tool for this study consists of 3 sections:-

Section A: Assessment Of Demographic Variables

Assessment of demographic variable consisted of 8 items which included, age of the primigravid postnatal mother, religion, type of the family, socioeconomic status of the family, education of the mother, occupation of the mother, postnatal day and type of delivery.

Section B: Knowledge questionnaire

It consists of 4 parts:

Part I: Included 5 structured knowledge questionnaire on newborn care regarding thermal protection

Part II: Included 7 structured knowledge questionnaire on newborn care regarding breast feeding

Part III: Included 5 structured knowledge questionnaire on newborn care regarding prevention of infection

Part IV: Included 8 structured knowledge questionnaires on newborn care regarding identification of danger signs.

Section C: Observational check list

It consists of checklist to assess the practice for mummification of the newborn, breast feeding techniques and hand washing practices.

SCORING INTERPRETATION OF THE TOOL:

Section A: Assessment of demographic variables

Section B: Scoring process for Knowledge questionnaire

It consisted of total 25 structured multiple-choice questions regarding basic knowledge of newborn care. The right and wrong answers was scored as one and zero respectively. The maximum score scored was twenty five.

The knowledge scores were arbitrarily categorized as follows:

Level of knowledge	Score
Inadequate knowledge	1-13
Moderately adequate knowledge	14-19
Adequate Knowledge	20-25

Section C: Practice Assessment Using Observational Check list

This section consisted of the observational checklist to assess the level of practice on newborn care using observational check list. Each steps of performance will be given a score of 1 mark and lack of performance will be given a score of 0 marks. Total maximum score will be 40 and assessing with the range of Score Interpretation.

The practice scores were arbitrarily categorized as follows:

Level of practice

Level of Practice	Score
Inadequate	1-20
Moderately adequate	21-30
Adequate	31-40

DATA COLLECTION PROCESS

- The data collection was done for the main study from 11/01/2020 to 10/02/2020. The participants for study were selected by purposive sampling technique among women living in the selected villages under Chhara CHC.
- Total 60 women were selected who fulfilled the inclusion criteria and were present at the time of data collection. The written consent was taken for conducting the study. House to house survey was done with the help of ASHA workers.
- Lecture cum discussion on Neonatal care package given to the mother, with A.V aids. Before administering the lecture, pre-test was obtained. After 8 days of pre-test and lecture the post-test has been conducted by using the same tool to assess the effectiveness of Neonatal care package on knowledge and practice on newborn care among the primi-gravid postnatal mothers.

RESULT

This section deals with the description of demographical variables of the primi gravid postnatal mothers and explained in frequency and percentage distribution of the demographic variables.

Table 1: Frequency & Percentage Distribution Of Samples Based On The Socio Demographic Variables. (n=60)

Sr. No.	Demographic variables	Frequency (f)	Percentage (%)
1.	Age (in years):		
	18-23	24	40
	24-29	29	48.3
	30-35	7	11.7
	36-40	0	0
2.	Religion :		
	Hindu	51	85
	Muslim	7	11.7
	Sikh	2	3.3
	Others	0	0
3.	Type of family:		
	Nuclear family	26	43.3
	Joint family	34	56.7
	Widow	0	0
	Others	0	0
4.	Socio-economic status:		
	Poor family	38	63.3
	Middle class family	22	36.7
	High class family	0	0
	Others	0	0
5.	Education:		
	Illiterate	5	8.3
	Can read and write	28	46.7
	High school education	25	41.7
	Degree and above	2	3.3
6.	Occupation of the mother:		
	House wife	58	96.7
	Company worker	2	3.3
	Government employee	0	0
	Business	0	0
7.	Postnatal day:		
	0-5	0	0
	6-10	9	15
	11-15	22	36.7
	16-28	29	48.3
8.	Type of delivery:		
	FTND	39	65
	LSCS	21	35
	Forceps	0	0
	Vacuum	0	0

Table 1 shows that 48.3 % of women belong to 24-29 years whereas 40% women belong to 18-23 years. Majority 85% of women are Hindu. Mostly 96.7% women are housewife.

Table-2: Area wise Mean, SD and mean % of knowledge before and after administration of intervention regarding newborn care among the primigravid postnatal mothers. (n=60)

Level of knowledge	Max. score	Pre test			Post test			Difference in mean
		Mean	SD	Mean %	Mean	SD	Mean %	
Thermal protection	5	1.93	1.23	39	4.61	0.80	92	54
Breast feeding	7	3.16	1.46	45	6.6	0.61	94	49
Prevention of infection	5	2.53	1.19	51	4.55	0.85	91	40
Identification of danger sign in newborn	8	3.16	1.89	40	6.98	0.82	87	48
Overall	25	10.8	3.86	43	22.7	1.49	91	48

The above table shows the mean difference of pre-test and post-test level of knowledge of primigravid postnatal mothers regarding newborn care that is in thermal protection 54%. Breastfeeding 49%, prevention of infection 40%, identification of danger signs 48%. The overall difference is 48. Thus the neonatal care package was effective.

Table-3: Area wise Mean, SD and Mean% Of Practice Before And After Administration Of Intervention Regarding Newborn Care Among The Primigravid Postnatal Mothers. (n=60)

Level of Practice	Max. score	Pre test			Post test			Difference in mean
		Mean	SD	Mean %	Mean	SD	Mean %	
Mummification	15	13.15	1.05	88	14.08	0.84	94	6
Breast feeding	19	13.5	2.02	71	16.5	1.23	87	16
Hand washing	6	4.01	1.26	67	4.78	1.07	80	13
Overall	40	30.7	3.11	77	35.45	1.65	89	12

The table depicts the pre-test and post-test level of practice score mean difference in mummification 6, breast feeding practice 16, hand washing procedure 13, and the overall 12.

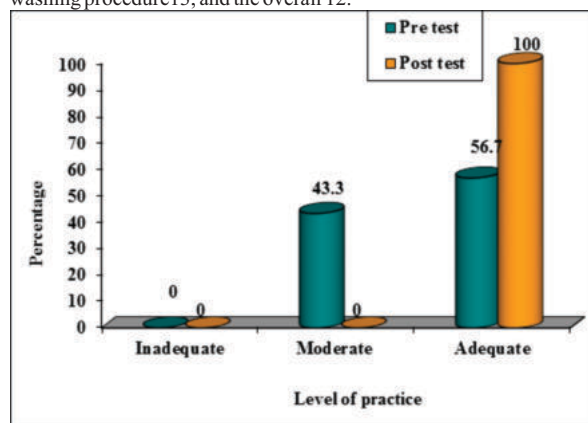


Figure 1: Frequency and percentage wise distribution to assess the effectiveness of Neonatal care package on level of practice

The above figure depicts that in the pre-test level of knowledge, 46 (76.7 %) were inadequate, 14 (23.3%) was moderate and 0% was adequate. Whereas the post-test level of knowledge was improved with 0% of inadequate knowledge, 2(3.3%) of moderate knowledge and 58(96.7%) of adequate knowledge on newborn care.

The table depicts that the mean percentage obtain by the mothers in pre-test is 10.8 with SD of 3.86 and the mean percentage obtain by the mothers in post-test is 22.7 with SD of 1.49. There is a significant difference in the knowledge score of primigravid postnatal mothers on neonatal care package before and after the administration of neonatal care package.

Table-4: Effectiveness Of Neonatal Care Package On Level Of Knowledge Regarding Newborn Care Among The Primigravid Postnatal Mothers. (n=60)

	Pre-test		Post-test		Mean difference	't'-value	P-value
	Mean	SD	Mean	SD			
Thermal protection	1.93	1.23	4.61	0.80	2.68	14.39	P<0.001***
Breast feeding	3.16	1.46	6.6	0.61	3.43	16.6	P<0.001***
Prevention of infection	2.53	1.19	4.55	0.85	2.01	13.85	P<0.001***
Identification of danger sign in new born	3.16	1.89	6.98	0.82	3.8	14.72	P<0.001***
Overall	10.8	3.86	22.7	1.49	11.9	23.48	P<0.001***

*-P<0.05, significant and **-P<0.01 & ***-P<0.001, highly significant

Table-5: Effectiveness Of Neonatal Care Package On Level Of Practice Regarding Newborn Care Among The Primigravid Postnatal Mothers. (n=60)

	Pre-test		Post-test		Mean difference	't'-value	P-value
	Mean	SD	Mean	SD			
Mumification	13.15	1.05	14.08	0.84	0.93	6.06	P<0.001***
Breast feeding	13.5	2.02	16.5	1.23	3.05	10.64	P<0.001***
Hand washing	4.01	1.26	4.78	1.07	0.77	3.62	P<0.001***
Overall	30.7	3.11	35.45	1.65	4.75	11.9	P<0.001***

*-P<0.05, significant and **-P<0.01 & ***-P<0.001, Highly significant

The effectiveness of the neonatal care package is highly significant as the post-test mean value is 35.45 and the post-test mean value 30.7

Table-6: Correlation Between Knowledge And Practice Regarding Newborn Care Among The Primigravid Postnatal Mothers. (n=60)

Knowledge and practice	Pre test		Post test	
	'r'-value	p-value	'r'-value	p-value
	-0.14	0.253	0.599	P<0.001***

The above table depicts that the obtained r value 0.599 is greater than 0. Therefore r value indicates strong positive correlation between the knowledge and practice before and (r= -0.14) and after (r = 0.599) the administration of neonatal care package and the research hypotheses stated that there is a significant positive correlation between knowledge and practice score of primi gravid postnatal mothers on newborn care was accepted.

Table 7: Association Between Level Of Knowledge In Pre-test And Selected Demographic Variables. (n=60)

Demographic variables	Inadequate		Moderate		χ^2 -value	p-value
	f	%	f	%		
1.Age (in years):					0.89 (df=2)	0.641 NS
18-23	17	28.33	7	11.67		
24-29	23	38.33	6	10		
30-35	6	10	1	1.67		
36-40	0	0	0	0		
2.Religion :					1.06 (df=2)	0.588 NS
Hindu	38	63.33	13	21.67		
Muslim	6	10	1	1.67		
Sikh	2	3.33	0	0		
Others	0	0	0	0		
3.Type of family:					0.33 (df=1)	0.565 NS
Nuclear family	19	31.67	7	11.67		
Joint family	27	45	7	11.67		
Widow	0	0	0	0		
Others	0	0	0	0		

4.Socio-economic status:					1.39 (df=1)	0.237 NS
Poor family	31	51.67	7	11.67		
Middle class family	15	25	7	11.67		
High class family	0	0	0	0		
Others	0	0	0	0		
5.Education :					5.36 (df=3)	0.147 NS
Illiterate	2	3.33	3	5		
Can read and write	22	36.67	6	10		
High school education	21	35	4	6.67		
Degree and above	1	1.67	1	1.67		
6.Occupation of the mother :					6.78 (df=1)	0.009 ** HS
House wife	46	76.67	12	20		
Company workers	0	0	2	3.33		
Government employee	0	0	0	0		
Business	0	0	0	0		
7.Postnatal day :					0.31 (df=2)	0.856 NS
0-5	0	0	2	3.33		
6-10	7	11.67	6	10		
11-15	16	26.67	6	10		
16-28	23	38.33	0	0		
8.Type of delivery :					0.49 (df=1)	0.481 NS
FTND	31	51.67	8	13.3		
LSCS	15	25	6	10		
Forceps	0	0	0	0		
Vacuum	0	0	0	0		

*p<0.05 significant, ** p<0.01 & ***p<0.001 highly significant.

Table 8: Association Between Level Of Practice In Pre-test And Selected Demographic Variables. (n=60)

Demographic variables	Moderate		Adequate		χ^2 -value	p-value
	f	%	f	%		
1.Age (in years):					3.58 (df=2)	0.166 NS
18-23 years	13	21.67	11	18.33		
24-29 years	12	20	17	28.33		
30-35 years	1	1.67	6	10		
35-40 years	0	0	0	0		
2.Religion :					2.07 (df=2)	0.355 NS
Hindu	22	36.67	29	48.33		
Muslim	4	6.67	3	5		
Sikh	0	0	2	3.33		
Others	0	0	0	0		
3.Type of family:					0.84 (df=1)	0.362 NS
Nuclear family	13	21.67	13	21.67		
Joint family	13	21.67	21	35		
Widow	0	0	0	0		
Others	0	0	0	0		
4. Socio-economic status:					0.08 (df=1)	0.773 NS
Poor family	17	28.33	21	35		
Middle class family	9	15	13	21.67		
High class family	0	0	0	0		
Others	0	0	0	0		
5.Education :					1.77 (df=3)	0.623 NS
Illiterate	1	1.67	4	6.67		
Can read and write	14	23.33	14	23.33		
High school education	10	16.67	15	25		
Degree and above	1	1.67	1	1.67		
6. Occupation of the mother					1.58 (df=1)	0.208 NS
House wife	26	43.33	32	53.3		
Company workers	0	0	2	3.33		
Government employee	0	0	0	0		
Business	0	0	0	0		
7. Postnatal day :					0.93 (df=2)	0.627 NS
0-5	0	0	0	0		
6-10	5	8.33	4	6.67		
11-15	10	16.67	12	20		
16-28	11	18.33	18	30		
8.Type of delivery :					1.07 (df=1)	0.299 NS
FTND	15	25	24	40		
LSCS	11	18.3	10	16.67		
Forceps	0	0	0	0		
Vacuum	0	0	0	0		

*p<0.05 significant, **p<0.01 & ***p<0.001 highly significant.

CONCLUSION

Thus the study concluded when the knowledge on newborn care among primi gravid mothers increases their practice level also increases. The findings proved that Neonatal care package was very effective and had a significant effect on knowledge and practice regarding neonatal care. Therefore the intervention tool can be utilized by the health care professional in their practice at the community level.

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