

A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Management of Low Birth Weight (LBW) Babies among Postnatal Mothers in Selected Community at Gwalior

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ABSTRACT

Background: Low birth weight is one of the important causes for the high infant mortality rate in developing countries. In India during the year 1991, the IMR was 80 per 1000 live births & neonatal mortality rate (NMR) was 51 per 1000 live births. LBW babies have been reported to lag behind their heavier counterpart in development for the rest of their lives. **Objective:** The present study attempted to assess the effectiveness of structured teaching programme on knowledge regarding management of low birth weight (LBW) babies among postnatal mothers. **Methods:** In the present study, evaluative research approach was selected; one group pre-test and post-test design was adopted. The structured interview schedule on management of low birth weight (LBW) babies among postnatal Mothers was used to collect the data. The main study was conducted at Kedarpur and Barai rural community Gwalior, Madhya Pradesh, with the sample size of 40 postnatal mothers selected by using convenient sampling technique and the collected data were analyzed and interpreted based on descriptive and inferential statistics. **Results:** The overall mean score of the subjects in pre-test was 56.25% with standard deviation 2.80. In post-test, the mean percentage of the Overall means score of the subjects in post-test was 76.25% with standard deviation 2.28. The obtained 't' value was greater than the table value and found to be highly significant at the level of $p < 0.005$. The findings evidenced structured teaching programme was effective in increasing the knowledge of the postnatal mothers regarding management of low birth weight (LBW) babies. **Conclusion:** The study concluded that there was a significant improvement in the knowledge after structured teaching programme. Thus structured teaching programme is effective in improving the knowledge of the mothers.

KEYWORDS: Structure teaching programme, Effectiveness, Knowledge, Postnatal mothers, Low birth weight

INTRODUCTION:

Motherhood is a beautiful and joyous experience to a woman. The health of the mother during pregnancy is important to give birth to a healthy baby. The best and most precious gift a mother can give her baby is the gift of health.¹ The healthy new born is born at term, cries immediately after delivery and establishes satisfactory rhythmic pulmonary respiration. In India reports of various studies shows birth weights of mature new born varying between 2.5 to 3.9 kgs with a mean of 2.7 kgs.²

WHO has defined the term "low birth weight" as birth weight less than 2500 grams. As per the definition babies with birth weight of less than 2500 grams are classified as low birth weight irrespective of the duration of the gestational period. New-borns with birth weight (for gestational age) of less than 10th percentile are categorized as "small for date" (SFD). Thus the term low birth weight includes preterm babies (those born before 37 weeks of gestation) as well as

full-term babies who are small for date due to intrauterine growth retardation.³

Survival of LBW new born during first month of life is determined by stressors of intrauterine life, problems faced during delivery as well as by adjustment to new environment. Birth weight is the single most important marker of adverse perinatal, neonatal and infantile outcome. Over 80 percent of all neonatal deaths occur among the LBW babies. LBW infants have 2-3 times increased risk of mortality due to infection compared to normal birth weight babies. The common problems associated with premature babies are hypothermia respiratory distress syndrome, difficulty in feeding because of weakness, more susceptible to infection, greater likelihood of contracting jaundice.⁴

NEED FOR STUDY:

Low birth weight new-borns forms a paediatric priority because they have less chance of survival than babies

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weighing 2500 gm. Half of the prenatal and one third of infant mortality are due to the low birth weight. Low birth weight may lead to serious physical and mental handicap in those who survive. Incidence of LBW new-borns in India is estimated to be 5-7 percent in some of the industrially advanced countries.⁵

In India about 25-35 percent of babies are born with low birth weight. Over 80 percent of neonatal deaths and 50 percent of infant deaths occur among low birth weight neonates. A LBW new born may face problems like hypothermia, increased chance to acquire infection due to lack of immunity and LBW new-borns are at high risk of having problem with feeding which later can lead to malnutrition¹⁰. Hence it is important to educate the mother about the problem and how to manage the new born with such problems.⁶

More than 95% of low birth weight babies are born in developing countries. However, data collection for low birth weight is difficult because babies are not weighed at birth in many countries. Nearly 4 million babies die in the first month of life and premature birth are major causes. Half of all low birth weight babies are in south-central Asia, where 27% of infant are born below 5.5 pounds low birth weight levels in sub-saharan.⁷

The researcher felt the need to identify the needs of mothers and educate them on care of LBW new-borns, so as to improve the care of LBW new-borns and to promote normal and healthy growth and development and thereby reduce LBW new-borns mortality and morbidity.

PROBLEM STATEMENT:

"A study to assess the effectiveness of structured teaching programme on knowledge regarding management of low birth weight (LBW) babies among postnatal mothers in selected community at Gwalior."

OBJECTIVES:

1. To determine the level of knowledge of postnatal mothers regarding management of low birth weight babies by pre-test score
2. To evaluate the effectiveness of structured teaching programme on management of low birth weight babies.
3. To find the association between pre-test & post-test knowledge scores with selected demographic variables

HYPOTHESIS:

H1: There will be a significant difference between pre and post-test knowledge scores of mothers.

H2: There will be significant association between pre-test and post-test knowledge scores with selected demographic variable.

OPERATIONAL DEFINITIONS

Assess: It refers to knowledge level of mothers regarding the factors affecting & management of low birth weight babies.

Knowledge:

In this study it refers to the correct response of mothers of LBW new-borns to the knowledge item in a structured teaching programme on the care of LBW new-borns & expressed in term of knowledge scores.

Mothers: It refers to individuals who are having new born babies whose birth weight is less than 2500gms.

Structured teaching Programme: Refers to systematically developed instructional

method between the investigator and study subject that helps for knowing about factors affecting and management of LBW new-borns

Low birth weight: Any new born or neonate weighing less than 2500gm at birth irrespective of gestational age. In this study it refers to those new born whose weight at birth was less than 2500gms irrespective of gestational age.

MATERIAL AND METHOD:

Research approach:

An evaluative research approach was adopted.

Research design:

Quasi-Experimental with one group pre-test post- test design.

Variables:

- **Dependent variable**-knowledge of postnatal mothers regarding management of low birth weight (LBW) babies.
- **Independent variable**-Structured teaching programme on management of low birth weight (LBW) babies.
- **Extraneous variables**-Age, education, occupation, religion, Family income, gravida, type of diet, type of diet Type of Present Delivery, previous history of Low Birth Weight Baby, Source of information regarding Low Birth Weight Baby.

Setting:

The study was conducted in Kedarpur and Barai rural community Gwalior.

Population:

- **Target population**-Postnatal mothers with low birth weight babies in selected community at Gwalior.

Sample:

Postnatal mothers residing in selected community at Gwalior.

Sample size: 40

Sample techniques:

Convenient sampling technique was adopted to select the samples.

Criteria for sample selection:

Inclusion criteria of the present study were-

- Postnatal mothers who are willing to participate in the study.
- Postnatal mothers those who are available during data collection.

Exclusion criteria of the present study were-

- Mothers who are previously not sensitized with similar studies.

Tool and method of data collection:

Part I: Comprised demographic data

Part II: Comprised Structured interview schedule for postnatal mothers, which had very relevant, relevant, need modification, not relevant and remarks of experts.

Selection and development of tool: In present study data collection technique was structured interview schedule. It is considered to be the appropriate instrument to elicit the response both from literates and illiterates. Keeping this in mind structured interview schedule was selected and developed on management of low birth weight (LBW) babies. The tool was developed by internet search, an

extensive review of literature, and the various experts in the field of nursing and based on the investigator’s personal experience the Structured Interview schedule on management of low birth weight (LBW) babies.

Description of the tool: Structured Interview schedule consist of 2 parts i.e. Part I and part II

Part I: Consists of items on demographic variables like, age, education, occupation, religion, Family income, gravida, type of diet, type of diet Type of Present Delivery, previous history of Low Birth Weight Baby, Source of information regarding Low Birth Weight Baby.

Part II: Consists of 40 knowledge items related to management of low birth weight baby which include General concept, Physiological alteration in a low birth weight, Breast feeding, Kangaroo mother care, Physical care, Temperature, Prevention of infection.

SCORING KEY

Scoring key is prepared for Part-I by coding the demographic variables. For Part-II score ‘1’ and ‘0’ are awarded to correct and wrong response. Thus the maximum score is 40.

To interpret the level of knowledge the scores subjected as follows:

Inadequate <50, Moderate 50- 75, Adequate > 75

Reliability of tool: Split Half method was used and reliability co-efficient was calculated by using raw score formula. The calculated ‘r’ value is 0.81 and the developed tool was found to be highly reliable.

Data collection procedure- After obtaining the formal permission from the district health officer Chickaballapur [dist].The main study was conducted among 40 subjects; the

RESULTS:

subject was selected by convenient sampling technique. The investigator given self-introduction explained the purpose of the study, subject’s willingness to participate in the study was ascertained. The subjects are assured anonymity and confidentiality of the information provided by them and written informed consent was obtained. The pre-test was conducted by administering the Structured Interview schedule followed by STP on management of low birth weight baby. On the 7th day post test was conducted by using the same tool, each subject took 30 minutes to answer the Interview schedule.

Ethical consideration:

Ethical Clearance will be obtained from the in University or College ethical committee. Informed written consent will be taken from the study subjects after giving proper explanation of the purpose of the study. Informed consent will be developed in English as well as in Hindi language. Confidentiality and anonymity of the subjects will be maintained throughout the study.

Plan for data analysis:

- Demographic variables would be analyzed using descriptive statistics i.e. frequency and percentage.
- Pre and post-test knowledge scores of the participants were planned to be summarized in mean, standard deviation and mean percentage.
- The paired ‘t’ value was planned to test hypothesis for the purpose of the effectiveness of teaching programme.
- The chi square value were planned to be computed in order to test hypothesis to find out the relationship between pre- test knowledge level and demographic variables.

Table-1 Distribution of subjects according to their demographic variables

S.NO	Demographic variables	Frequency	Percentage
1.	Age of mothers in Years		
	18-27years	16	40
	28-37years	20	50
2.	38-47 years	04	10
	Educational Level		
	Primary education	12	30
	Secondary education	14	35
	Intermediate	01	2.5
3.	Graduate	09	22.5
	Post-graduation and above	4	10
	Occupation		
	House wife	15	37.5
	Agriculture	05	12.5
4.	Government employee	19	47.5
	Self employed	01	2.5
	Religion		
	Hindu	14	35
5.	Muslim	18	45
	Christian	08	20
	Family income		
	Below Rs. 5000	5	12.5
	Rs. 5001-10000	18	45
6.	Rs. 10001-15000	01	2.5
	Rs. 15001-20000	04	10
	Rs. 20001 and above	12	30
	Gravida status		
Prime	29	72.5	
Second	11	27.5	

7.	Family type		
	Nuclear	31	77.5
	Joint	09	22.5
8.	Type of diet		
	Vegetarian	14	35
	Non vegetarian	26	65
9.	Place of residence		
	Urban	35	87.5
	Rural	05	12.5
10.	Type of present delivery		
	Normal Vaginal	13	32.5
	Forceps delivery	04	10
	Cesarean Section	23	57.5
11.	Previous history of low birth weight baby		
	Yes	00	00
	No	40	100
12.	Source of information		
	Radio/Television	17	42.5
	News paper/Books	09	22.5
	Family members/Relatives/ Friends	07	17.5
	Health Personnel/Health magazines	07	17.5

Table 1. described about the frequency, percentage distribution of demographic variable. Distribution of the subject, Majority of subjects 50 % belong to the age group of 28-37 years, In relation to education 35% completed secondary education, 30% of subjects were completed primary education, In this study 47.5% of mothers were employed in government set up, 23.7.5% were house wife, Majority 45% of mothers belong to Muslim and only 20% belong to Christian religion. In this study 45 % mother had family income between Rs. 5001-10000, 30% of mother had Rs. 20001 and above, Majority 72. 5% of mothers were prime gravida and only 27.5% were second gravida. Majority 77.5% of mothers belongs to nuclear family and only 22.5% belongs to joint family, majority 65% of mothers is to have non vegetarian and only 35% is to have vegetarian, Majority 87.5 % of mothers were residing in urban area and only 12.5% were residing in rural area, Majority 57.5 % of mothers have under gone cesarean section, and only 10% of mother underwent forceps delivery, majority 55% of mothers had two children and only 45% of mothers had one child, Majority 100% of mothers had no history of low birth weight baby and majority 42.5% of mothers had information from Radio/Television.

Table-2 Pre-test and post-test knowledge level of postnatal mothers

Knowledge level	Pre test Frequency	Pre test Percent	Post test Frequency	Post test Percent
a. Inadequate knowledge	10	25.0	0	0.0
b. Moderate knowledge	30	75.0	20	50.0
c. Adequate knowledge	0	0.0	20	50.0
Total	40	100	40	100

Table 2 shows that 75% of participants had moderate knowledge and only 25% had inadequate knowledge in pre-test and in post-test 50% had adequate knowledge and moderate knowledge respectively.

Table 3: mean, mean percentage and standard deviation for the pre-test knowledge of postnatal mothers

N=40

Sl. N.	Knowledge aspects	No. of Items	Max Score	Mean	Mean %	SD
1	General concept	6	6	4.12	68.66	0.853
2	Physiological alteration in a low birth weight new-born	9	9	5.12	56.88	0.822
3	Breast feeding	10	10	5.52	55.2	0.905
4	Kangaroo mother care	3	3	1.72	57.33	0.64
5	Prevention of infection	6	6	2.88	48	1.09
6	Temperature	3	3	1.15	38.33	1.189
7	Physical care	3	3	1.98	66	0.48
Overall		40	40	22.5	56.25	2.801

The above table shows that the maximum mean percentage obtained by the subjects is found in the aspect of general concept (68.665%) followed by Physical care (66%)kangaroo mother care (57.33%) Physiological alteration (56.88%), Breast feeding(55.2%), prevention of infection (48%) and least mean score (38.33%) found in the aspect of Temperature. The overall knowledge scores of respondents were found to be 56.25% with standard deviation 2.80 in pre-test.

Table - 4: mean, mean percentage and standard deviation for the post-test knowledge of postnatal mothers
N=40

Sl. No.	Knowledge aspects	No. of Items	Max Score	Mean	Mean %	SD
1	General concept	6	6	4.35	72.5	0.533
2	Physiological alteration in a low birth weight newborn	9	9	7.8	86.66	1.203
3	Breast feeding	10	10	7.4	74	0.955
4	Kangaroo mother care	3	3	2.38	79.33	0.49
5	Prevention of infection	6	6	5.08	84.66	0.944
6	Temperature	3	3	1.82	60.66	0.594
7	Physical care	3	3	1.82	60.66	0.549
	Overall	40	40	30.65	76.25	2.282

The above table shows that the maximum mean percentage obtained by the subjects is found in the physiological alteration (86.66%) followed by Prevention of infection(84.66%) kangaroo mother care (79.33%) breast feeding (74%), general concept(72.5%), and least mean score (60.66%) found in the aspect of Temperature and physical care respectively. The overall knowledge scores of respondents were found to be 76.25% with standard deviation 2.282 in post-test.

Table5: Comparison of pre-test and post-test Knowledge scores of postnatal mothers regarding Management of low-birth-weight babies
N=40

Sl. No.	Knowledge aspects	Pre test		Post test		Mean difference	t Value	Df	Inference
		Mean	S D	Mean	S D				
1	General concept	4.12	0.853	4.35	0.533	0.23	1.548	39	NS
2	Physiological alteration in a low birth weight new born	5.12	0.822	7.8	1.203	2.67	11.213	39	S
3	Breast feeding	5.52	0.905	7.4	0.955	1.87	10.233	39	S
4	Kangaroo mother care	1.72	0.64	2.38	0.49	0.65	4.932	39	S
5	Prevention of infection	2.88	1.09	5.08	0.944	2.20	9.814	39	S
6	Temperature	1.15	1.189	1.82	0.594	0.67	3.420	39	S
7	Physical care	1.98	0.48	1.82	0.549	0.15	1.290	39	NS
	Overall	22.5	2.801	30.65	2.282	8.15	13.968	39	S

From the above table it is evident that the obtained "t" value 13.96 is greater than the table value at 0.01 level of significance. Therefore, "t" value is found to be significant. It means there is gain in knowledge level of mothers. This supports that structured teaching programme on management of low-birth-weight baby's is effective in increasing the knowledge level of mothers.

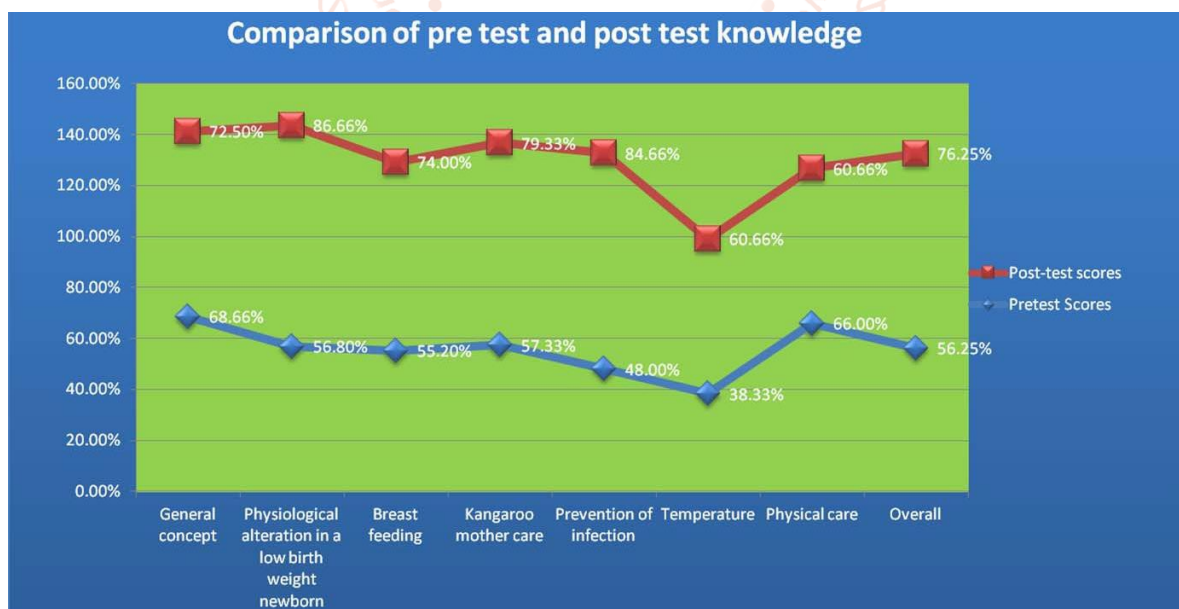


Fig: Comparison of pre and post-test Knowledge scores of postnatal mothers

**Table – 6: Association of Pre-test knowledge scores of postnatal mothers with selected demographic variables
N= 40**

Variables	Below Median	Median and Above	Chi square	Df	P value (0.5)	Inference
1. Age in Years						
A. 18-27 Years	11	5	6.111	2	0.047	NS
B. 28-37 Years	6	14				
C. 37-47 Years	1	3				
2. Education						
A. Primary Education	9	3	9.264	4	0.055	NS
B. Secondary Education	3	11				
C. Intermediate	1	0				
D. Graduate	3	6				
E. Post Graduation and above	2	2				
3. Occupation						
A. House wife	5	10	2.545	3	0.467	NS
B. Agriculture	3	2				
C. Government employee	10	9				
D. Self employee	0	1				
4. Religion						
A. Hindu	3	11	5.111	2	0.078	NS
B. Muslim	11	7				
C. Christian	4	4				
5. Family income						
A. Below Rs. 5000	2	3	8.440	4	0.077	NS
B. Rs. 5001-10000	5	13				
C. Rs. 100-15000	1	0				
D. Rs. 15001-20000	1	3				
E. Rs. 201 and above	9	3				
6. Gravida Status						
A. Prime	14	15	0.457	1	0.499	NS
B. Second	4	7				
7. Family type						
A. Nuclear	14	17	0.001	1	0.970	NS
B. Joint	4	5				
8. Type of Diet						
A. Vegetarian	8	6	1.283	1	0.257	NS
B. Non vegetarian	10	16				
9. Place of residence						
A. Urban	16	19	0.058	1	0.810	NS
B. Rural	2	3				
10. Type of delivery						
A. Normal	4	9	2.944	2	0.229	NS
B. Forceps delivery	1	3				
C. Cesarean Section	13	10				
11. Previous History of Low birth Weight						
A. No	18	22	-	-	-	-
12. Source of Information						
A. Radio/Television	11	6	6.100	3	0.107	NS
B. News paper/Books	4	5				
C. Family members/Relatives/ Friends	1	6				
D. Health Personnel/Health magazines	2	5				

The finding shows that the obtained χ^2 value is less than the table value at 0.05 levels of significance.

Therefore, there is no significant association between pre-test and post-test knowledge scores with selected demographic variables of participants.

DISCUSSION

EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON MANAGEMENT OF LOW BIRTH WEIGHT BABIES

The present study reveals that overall mean knowledge score obtained by the subjects was 22.5 in the pre-test whereas the overall knowledge obtained by the subjects was 30.65 in the post-test. The improvement means score for overall knowledge was 8.15 with the 't' value of 13.96 was greater than the table value at 0.05. Hence the research hypothesis which stated there will be significant difference in pre and post level knowledge on management of low birth weight (LBW) babies among postnatal mothers was accepted. This showed that the structured teaching programme was effective in increasing the knowledge of the postnatal mothers regarding management of low birth weight (LBW) babies.

The following study is similar to investigator study which supports the study.

The study conducted by E Binu Margerat et al. who assessed effectiveness of awareness programme on care of new-born for mothers of neonates in selected hospitals of Udipi District, Madhya Pradesh.

It was found that there was improvement in knowledge.

CONCLUSION:

Conclusions drawn from present study was as follows-

Structured teaching programme is an effective method. The pre-test mean is 22.5 and post-test mean score is 30.65 and the 't' value was 13.96. The obtained 't' value 13.96 was found to be significant at 0.01 Levels of significance.

RECOMMENDATIONS:

- An experimental study can be undertaken with a control group for effective comparison of the result.
- A study can be conducted by including additional demographic variables.

- A comparative study can be conducted between urban and rural settings.
- A study can be carried out to evaluate the efficiency of various teaching strategies like self-instructional module, pamphlets, leaflets and computer-assisted instruction on low birth weight babies.

Conflict of interest: No

Financial support: Self

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