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"A Study to Assess the Effectiveness of Structured Teaching Program on Knowledge And Attitude Regarding Care of Low Birth Weight Babies Among Mothers of Low Birth Weight Babies at Selected Hospital, Meerut

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ABSTRACT

Background: *Low-birth-weight (LBW) babies are highly vulnerable to health complications, and their survival largely depends on the mother's awareness and care practices. Inadequate maternal knowledge and negative attitudes toward LBW care can significantly affect t neonatal morbidity and mortality. Structured Teaching Programmes (STPs) can play a vital role in bridging this knowledge gap.*

OBJECTIVES

1. To assess the pre-test and post-test knowledge and attitude regarding the care of low-birth weight babies among mothers.

2. To evaluate the effectiveness of structure teaching programme on knowledge and attitude regarding the care of low-birth-weight babies among mothers by comparing pre-test and post- test knowledge score.

To determine the association between pre-test knowledge and attitude scores with selected Socio-demographic variables.

HYPOTHESES*: H1- There is significant difference between pretest and post-test knowledge and attitude score on care of low-birth-weight babies among mother of low-birth-weight babies.*

H2- There is a significance correlation between knowledge and attitude score on care of low-birthweight babies among mother of low-birth-weight babies.

H3- There is a significance association between level of knowledge and attitude on care of low birth-weight babies among mothers with selected demographic variables.

Methods: *A pre-experimental one-group pre-test post-test design was adopted. The study was conducted among 60 mothers of LBW babies admitted to a selected hospital in Meerut. Participants were selected using purposive sampling. Data were collected using a structured knowledge questionnaire and a 5-point Likert attitude scale. Descriptive statistics were used to summarize the data, and paired t-tests and chi-square tests were used for inferential analysis.*

Results: *The mean pre-test knowledge score was 10.45 (±3.26), which increased to 19.60 (±2.12) post-intervention. The mean attitude score also improved significantly. The paired t-test values for knowledge and attitude were statistically significant ($p < 0.05$). Educational qualification and prior knowledge were significantly associated with pre-test scores. This indicates that the STP was effective in enhancing both knowledge and attitude Levels.*

Conclusion: *The Structured Teaching Programme proved to be an effective intervention in improving maternal knowledge and attitude toward LBW baby care. It is recommended that similar educational interventions be implemented as part of routine postnatal care to promote neonatal health outcomes.*

Keywords: *Low-birth-weight babies, Structured Teaching Programme, maternal knowledge, maternal attitude, neonatal care, postnatal education.*

INTRODUCTION

Low birth weight (LBW), defined by the World Health Organization (WHO) as a birth weight of less than 2,500 grams, is a significant public health issue globally. It remains one of the leading causes of neonatal and infant mortality and morbidity. LBW infants are at increased risk of various complications, including hypothermia, infection, feeding difficulties, and long-term developmental delays. The burden

of LBW is particularly pronounced in developing countries, where access to healthcare services and maternal education often remains limited.[1]

The prevalence of LBW is influenced by multiple factors, such as preterm birth, intrauterine growth restriction, maternal malnutrition, infections during pregnancy, and inadequate prenatal care. These factors are further exacerbated by socioeconomic challenges, cultural practices, and insufficient health education among mothers. Addressing these issues requires a multifaceted approach that emphasizes maternal and newborn care, with mothers playing a central role in the survival and development of LBW infants. Mothers of LBW babies are the primary caregivers and have a critical role in ensuring the survival and well-being of their infants. However, providing effective care for LBW infants is often a challenge due to the specific and complex needs of these babies. Proper feeding practices, maintaining warmth through methods such as Kangaroo Mother Care (KMC), ensuring infection prevention, and fostering development through appropriate stimulation are essential aspects of LBW care.

OBJECTIVES

1. To assess the pre-test and post-test knowledge and attitude regarding the care of low-birthweight babies among mothers.
2. To evaluate the effectiveness of structure teaching programme on knowledge and attitude regarding the care of low-birth-weight babies among mothers by comparing pre-test and post- test knowledge score.
3. To determine the association between pre-test knowledge and attitude scores with selected sociodemographic variables.

HYPOTHESES

- H1- There is significant difference between pre test and post test knowledge and attitude score on care of low-birth-weight babies among mother of low-birthweight babies.
- H2- There is a significance correlation between knowledge and attitude score on care of low-birthweight babies among mother of low-birth-weight babies.
- H3- There is a significance association between level of knowledge and attitude on care of low birth-weight babies among mothers with selected demographic variables**.**

METHODOLOGY

- **Research approach:** Quantitative research approach
- **Research design:** pre-experimental one group pretest and post
- **Setting:** post natal ward in S.V.B.P. Hospital, Meerut
- **Target papulation:** post-natal mothers of low birth weight
- **Sampling techniques**: Non probability sampling techniques
- **Sample size:** 60 post-natal mothers of low-birth-weight babies
- **Data collection tools:** A demographic profile sheet, A self-structure knowledge questionnaire, A Likert types attitude scale
- **Data analysis:** Descriptive statistics and inferential statistics

RESULT

Section I

Describes socio-demographic characteristics

This section describes socio-demographic characteristics the knowledge and attitude regarding care of low-birth-weight babies among mother of low-birth-weight babies. The sample characteristics are described in terms of Age of mother, Occupation of the mother, Type of Family, Residence, Parity (Number of Children), Gestational age of baby at birth and Religion.

Table 4.1: Frequency and percentage of socio-demographic variables.
(N=60)

S. n.	Variable	Frequency	Percentage
1	**Age of the mother**		
a.	18–25 years	40	66.67
b.	26–30 years	10	16.67
c.	31–35 years	0	0.00

d.	Above 35 years	10	16.67
2	**Occupation of the mother**		
a.	Housewife	60	100.00
b.	Daily wage worker	0	0.00
c.	Private job	0	0.00
d.	Government employee	0	0.00
3	**Type of Family**		
a.	Nuclear family	40	66.67
b.	Joint family	20	33.33
4	**Residence**		
a.	Rural	45	75.00
b.	Urban	15	25.00
5	**Parity (Number of Children)**		
a.	Primipara (First child	30	50.00
b.	Multipara (More than one child	12	20.00
c.	Grand multipara (More than five children)	18	30.00
6	**Gestational Age of Baby at Birth**		
a.	Less than 32 weeks	30	50.00
b.	32–36 weeks	20	33.33
c.	37–40 weeks	10	16.67
d.	Above 40 weeks	0	0.00
7	**Religion**		
a.	Hindu	18	30.00
b.	Muslim	42	70.00
c.	Christian	0	0.00

Section II

Finding related to assessment of pretest level of knowledge regarding care of low birth weight babies among mother of low-birth-weight babies.

Table 4.2 Pretest Level of knowledge regarding care of low birth weight babies among mother of low-birth-weight babies
(N=60)

Pretest level of Knowledge	Scoring criteria	Frequency	Percentage (%)
Poor	0 – 10	40	66.67
Average	11 – 20	20	33.33
Good	21 – 30	0	0.00

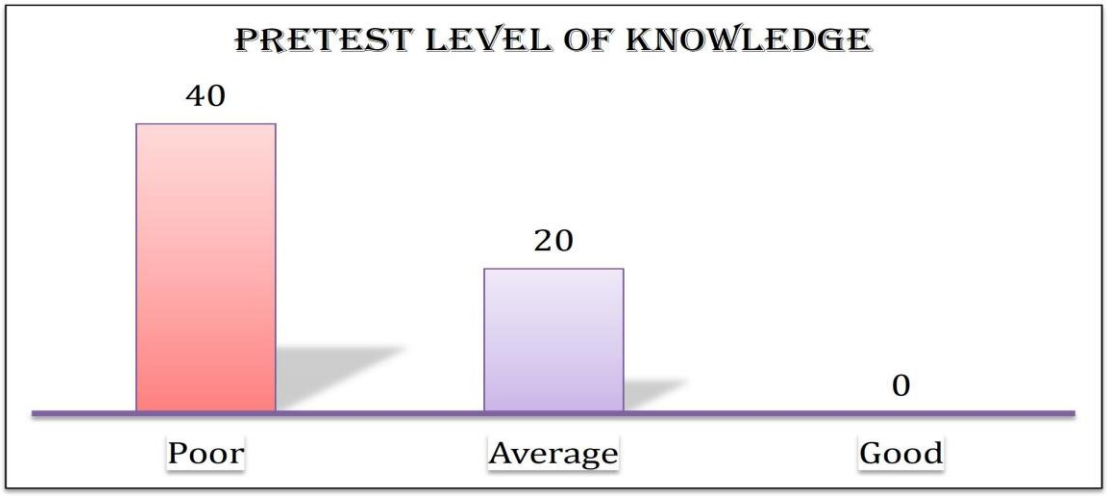

Figure 4.8 Bar diagram showing distribution of sample as per Pretest level of knowledge.

Table 4.3 Descriptive statistics of Pretest knowledge regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Mean	Median	Mode	S.D	Minimum	Maximum
9.65	9.00	9	5.259	3	20

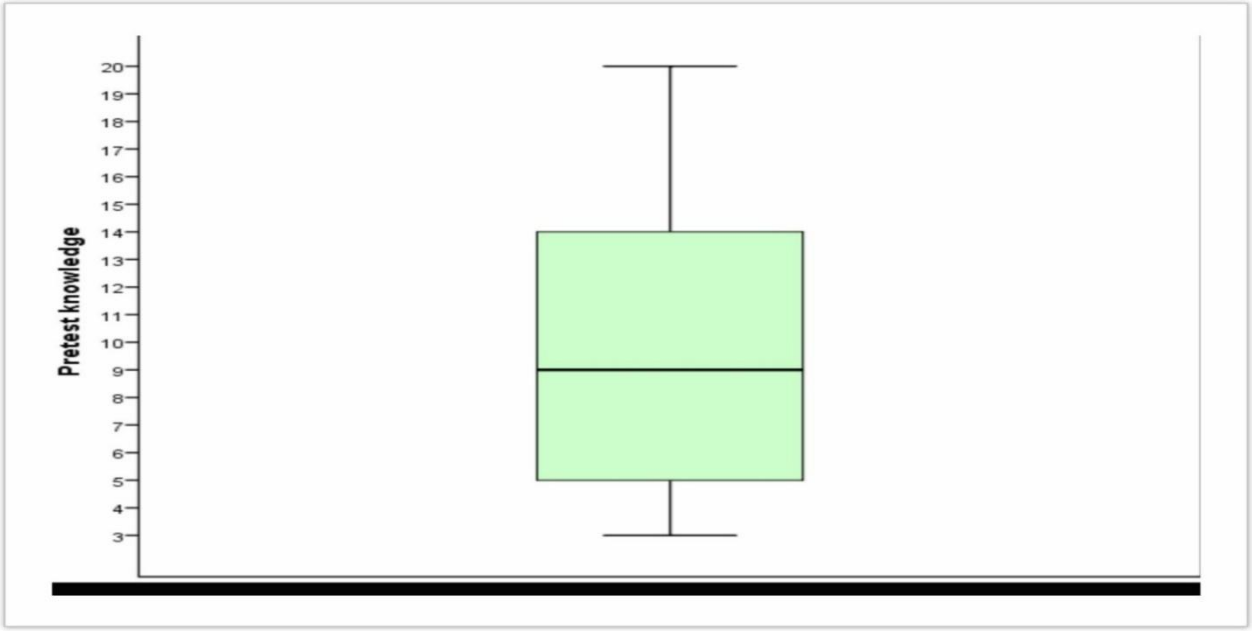

Figure 4.9 Box plot showing descriptive statistics of Pretest knowledge.

Table 4.4 Descriptive statistics of categories of Pretest level of knowledge regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Pretest level of knowledge	Frequency	Mean	Median	S.D.	Min	Max
Poor	40	6.43	6.50	2.427	3	10
Average	20	16.10	16.50	2.845	11	20
Good	0	-	-	-	-	-
Total	60	9.65	9.00	5.259	3	20

Table 4.4 presented the descriptive statistics of different categories of pretest knowledge levels regarding the care of low birth weight babies among mothers.

Section III
Finding related to assessment of Post-test level of knowledge regarding care of low birth weight babies among mother of low-birth-weight babies.

Table 4.5 Posttest Level of knowledge regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Posttest Level of Knowledge	Scoring criteria	Frequency	Percentage (%)
Poor	0 – 10	10	16.67
Average	11 – 20	31	51.67

Good	21 – 30	19	31.66

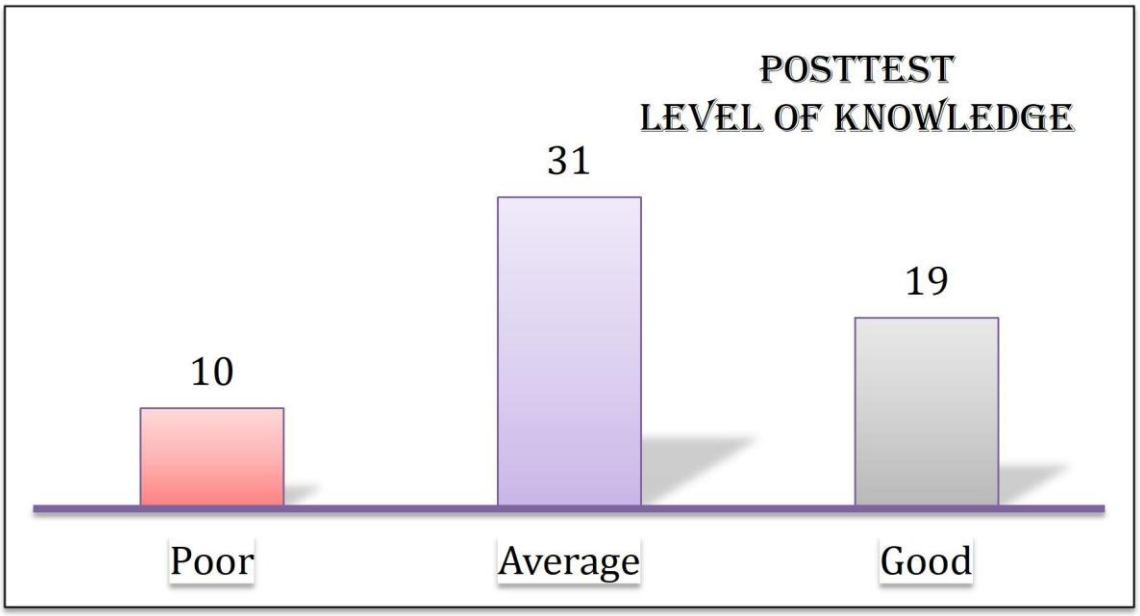

Figure 4.10 Bar diagram m showing distribution of sample as per Posttest level of knowledge.

Table 4.6 Descriptive statistics of Posttest knowledge regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Mean	Median	Mode	S.D	Minimum	Maximum
16.97	17.50	18	5.974	3	27

Figure 4.11 Box plot showing descriptive statistics of Posttest knowledge.

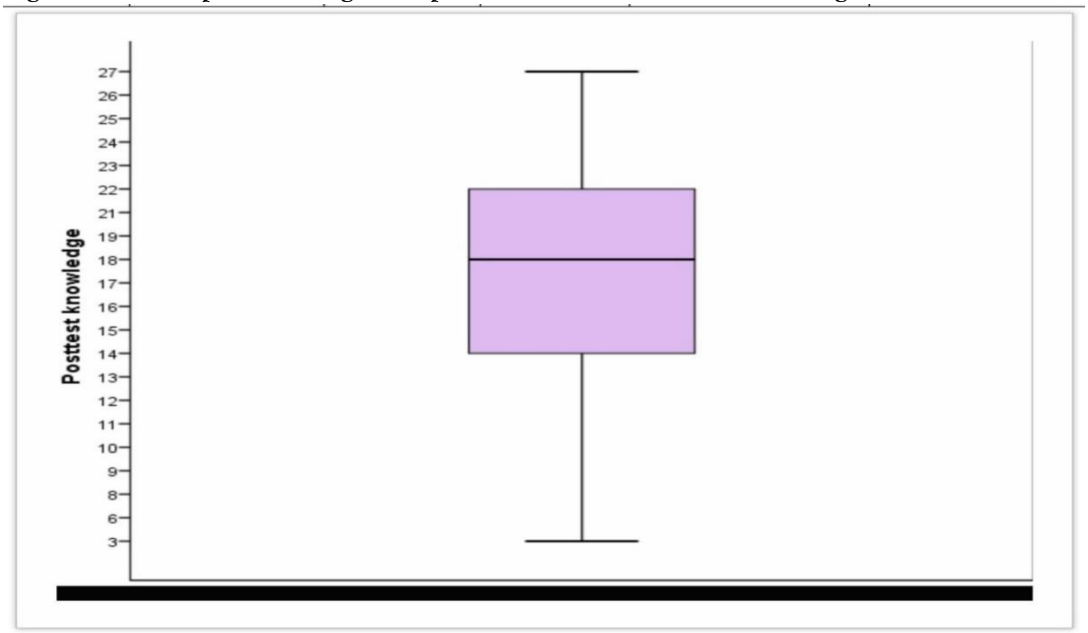

Table 4.7 Descriptive statistics of categories of Posttest Level of knowledge regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Post-test level of knowledge	Frequency	Mean	Median	S.D.	Min	Max
Poor	10	7.60	8.00	2.066	3	10
Average	31	15.74	16.00	2.352	11	19

Good	19	23.89	24.00	1.912	21	27
Total	60	16.97	17.50	5.974	3	27

Section IV
Finding related to effectiveness of structure teaching program on knowledge regarding care of low birth weight babies among mother of low-birth-weight babies.

Table 4.8 Comparison of pretest-posttest level of knowledge regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Level of knowledge	Pretest		Posttest	
	Frequency	Percentage	Frequency	Percentage
Poor	40	66.67	10	16.67
Average	20	33.33	31	51.67
Good	0	0.00	19	31.66

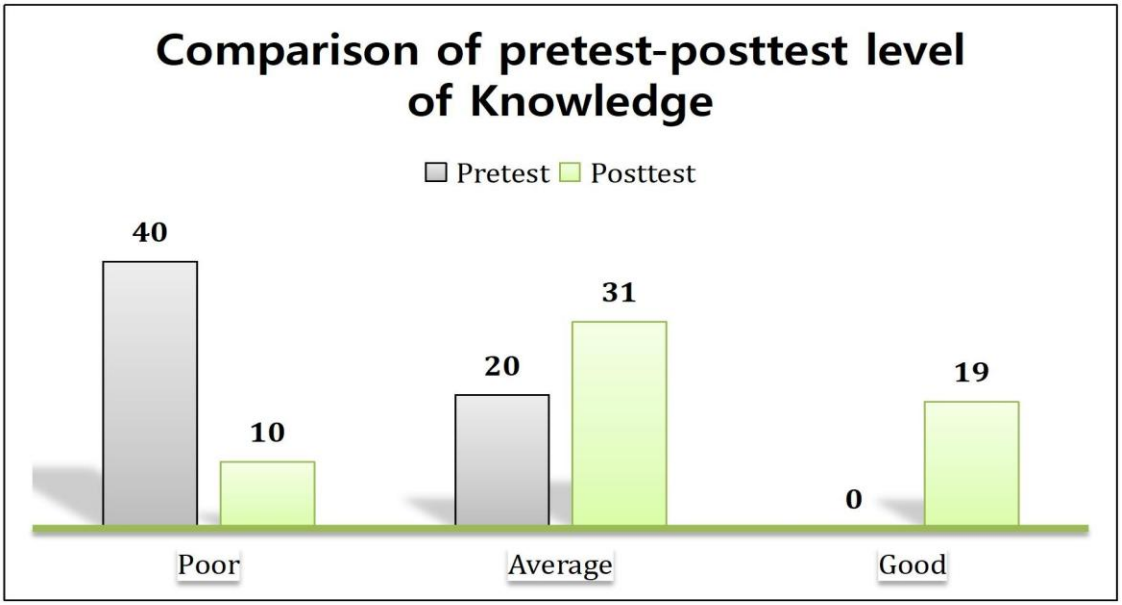

Figure 4.12 Bar diagram showing distribution of sample as per Comparison of pretest-posttest level of knowledge.

Table 4.9: Descriptive statistics of Pretest-Posttest level of knowledge regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Level of Knowledge	Mean	Median	S.D	Minimum	Maximum
Pretest Knowledge	9.65	9.00	5.259	3	20
Post test Knowledge	16.97	17.50	5.974	3	27

Table 4.9 the descriptive statistics comparing pretest and posttest knowledge levels regarding the care of low birth weight babies among mothers.

Table 4.10: "t-test" showing comparison of pretest-posttest level of knowledge.
(N=60)

Test	Mean	SD	Mean difference	t-test value	P value	Result
Pre test knowledge	9.65	5.259				
Post test	16.97	5.974	7.317	9.032	0.001	S

knowledge			

Sig = P value significant at 0.05 level of significance
NS = P value non-significant at 0.05 level of significance

SECTION V

Finding related to assessment of pretest level of attitude regarding care of low birth weight babies among mother of low-birth-weight babies.

Table 4.11 Pretest Level of attitude regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Pretest level of Attitude	Scoring criteria	Frequency	Percentage (%)
Unsatisfied	20 – 47	43	71.67
Neutral	48 – 74	7	11.66
Highly satisfied	75 – 100	10	16.67

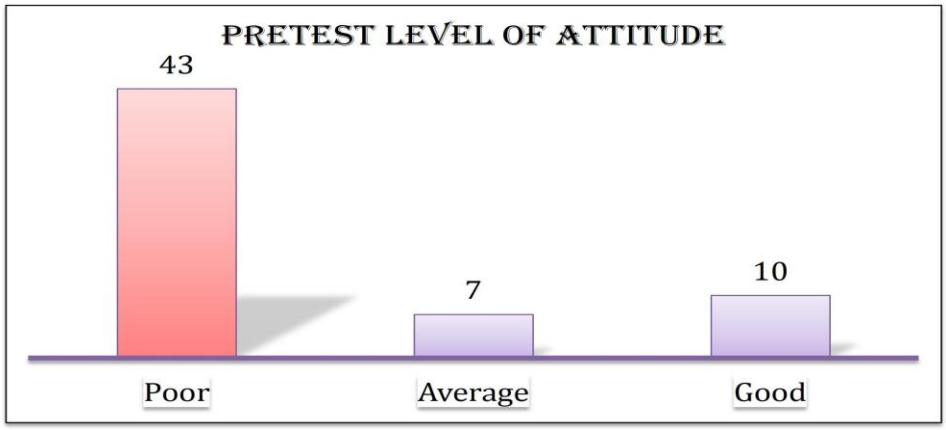

Figure 4.13 Bar diagram showing distribution of sample as per Pretest level of attitude.

Table 4.12 Descriptive statistics of Pretest attitude regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Mean	Median	Mode	S.D	Minimum	Maximum
46.77	40.00	41	18.296	27	85

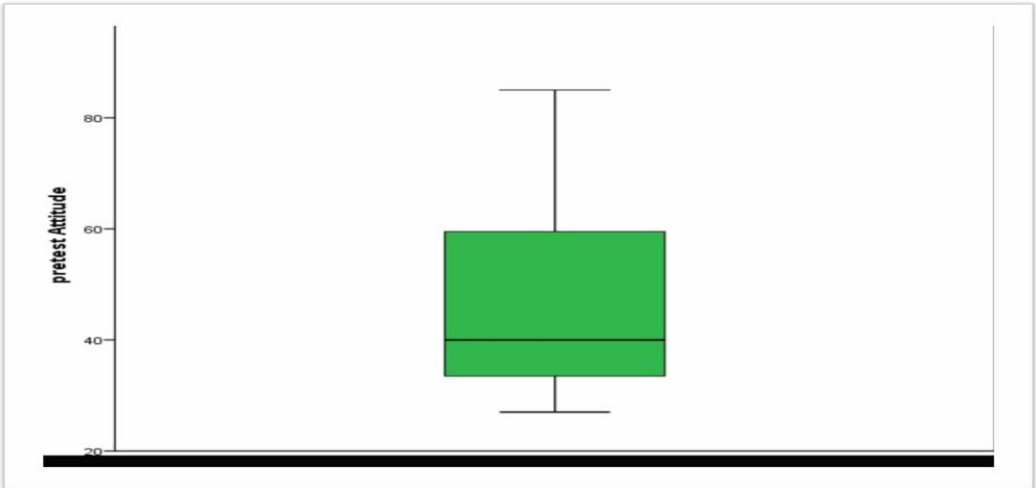

Figure 4.14 Box plot showing descriptive statistics of Pretest attitude.

Table 4.13 Descriptive statistics of categories of Pretest level of attitude regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Posttest level of attitude	Frequency	Mean	Median	S.D.	Min	Max
Unsatisfied	43	36.21	35.00	5.374	27	46
Neutral	7	63.14	61.00	5.928	57	74
Highly satisfied	10	80.70	82.50	3.974	75	85
Total	60	46.77	40.00	18.296	27	85

Table 4.13 Descriptive statistics of different categories of pretest levels of attitude regarding the care of low birth weight babies among mothers (N=60)

Section VI

Finding related to assessment of Posttest level of attitude regarding care of low birth weight babies among mother of low-birth-weight babies.

Table 4.14 Posttest Level of attitude regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Posttest level of Attitude	Scoring criteria	Frequency	Percentage (%)
Unsatisfied	20 – 47	8	13.33
Neutral	48 – 74	22	36.67
Highly satisfied	75 – 100	30	50.00

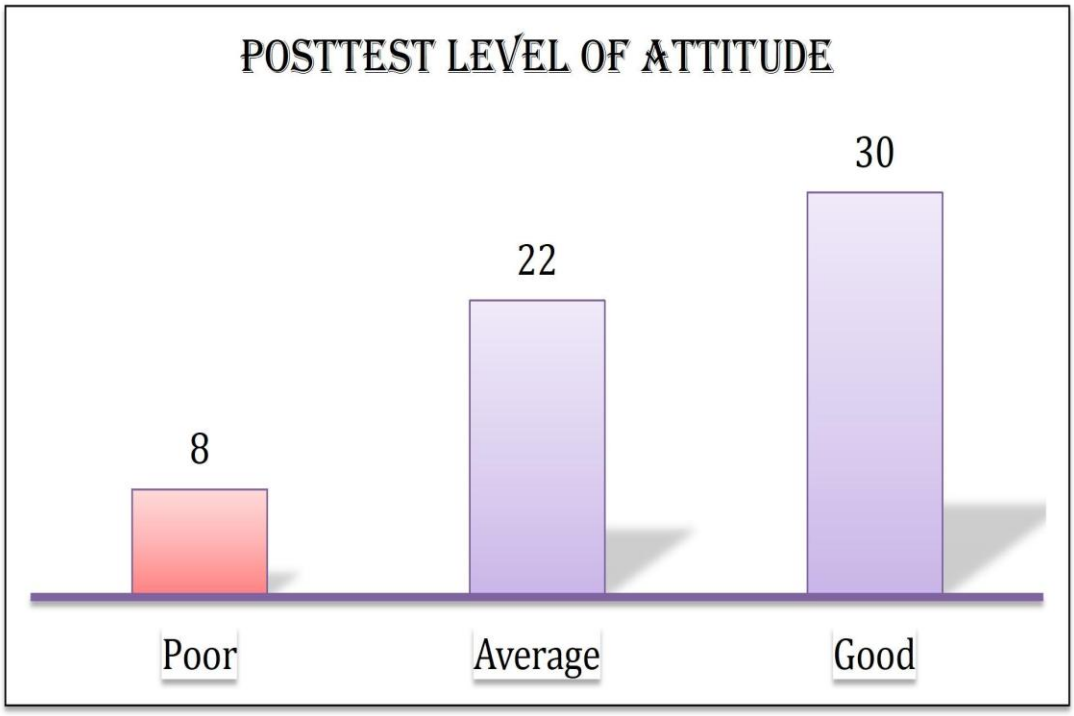

Figure 4.15 Bar diagram showing distribution of sample as per Posttest level of attitude.

Table 4.15 Descriptive statistics of Posttest attitude regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Mean	Median	Mode	S.D	Minimum	Maximum
69.60	75.00	87	16.897	28	89

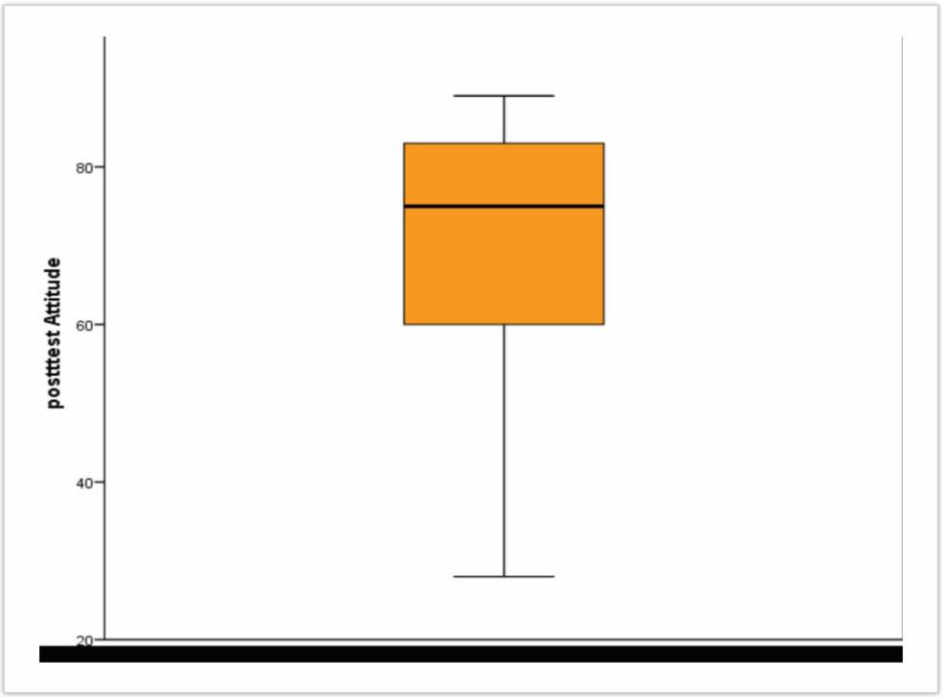

Figure 4.16 Box plot showing descriptive statistics of Posttest attitude.

Table 4.16 Descriptive statistics of categories of Posttest level of attitude regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Post test level of attitude	Frequency	Mean	Median	S.D.	Min	Max
Unsatisfied	8	35.00	34.00	4.342	28	41
Neutral	22	64.14	64.50	6.190	55	75
Highly satisfied	30	82.83	83.00	3.806	75	89
Total	60	69.60	75.00	16.897	28	89

Table 4.16 Descriptive statistics of different categories of posttest levels of attitude regarding the care of low birth weight babies among mothers (N=60)

SECTION VII
Finding related to effectiveness of structure teaching program on attitude regarding care of low birth weight babies among mother of low-birth-weight babies.

Table 4.17 Comparison of pretest-posttest level of attitude regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Level of attitude	Pretest		Post test	
	Frequency	Percentage	Frequency	Percentage
Unsatisfied	43	71.67	8	13.33
Neutral	7	11.66	22	36.67
Highly satisfied	10	16.67	30	50.00

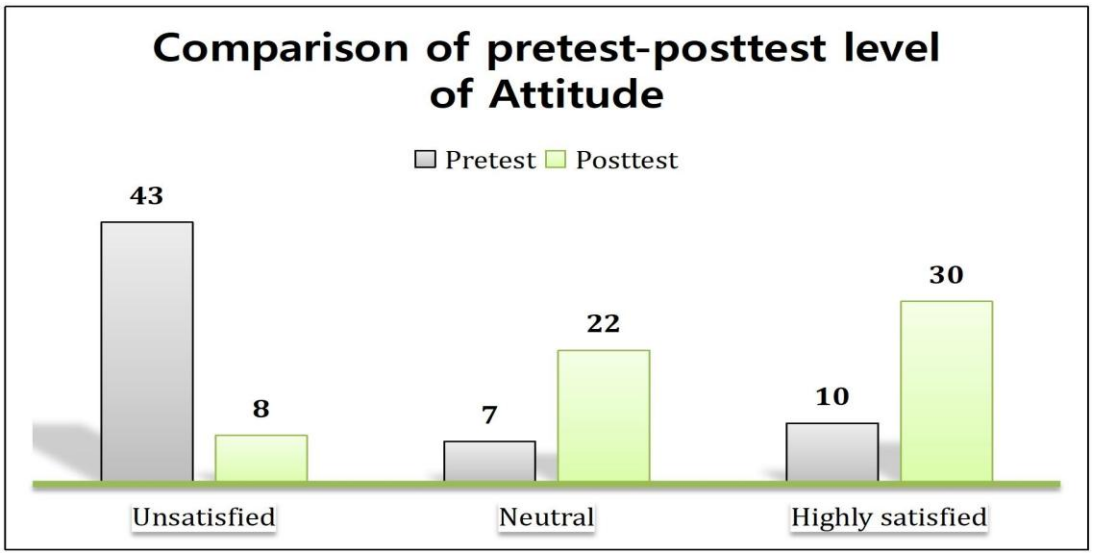

Figure 4.17 Bar diagram showing distribution of sample as per Comparison of pretest-posttest level of attitude.

Table 4.18: Descriptive statistics of Pretest-Posttest level of attitude regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Level of Attitude	Mean	Median	S.D	Minimum	Maximum
Pretest Attitude	46.77	40.00	18.296	27	85
Posttest Attitude	69.60	75.00	16.897	28	89

Table 4.19: "t-test" showing comparison of pretest- posttest level of attitude.
(N=60)

Test	Mean	SD	Mean difference	t-test value	P value	Result
Pretest attitude	46.77	18.296	22.833	9.986	0.001	S
Post test attitude	69.60	16.897				

Sig = P value significant at 0.05 level of significance
NS = P value non-significant at 0.05 level of significance

Section VIII
This section describes the correlation between Knowledge and attitude regarding care of low birth weight babies among mother of low-birth-weight babies.

Table 4.20 Correlation between knowledge and attitude regarding care of low birth weight babies among mother of low-birth-weight babies.
(N=60)

Level	Mean	S.D.	"r"	"p" value	Result
Level of Knowledge	9.65	5.259	0.133	0.310	NS
Level of Attitude	46.77	18.296			

S = P value significant at 0.05 level of significance
NS = P value non-significant at 0.05 level of significance

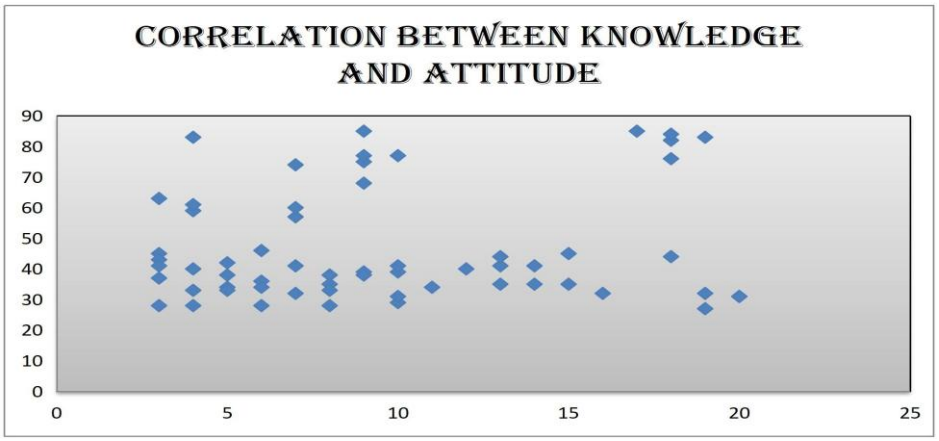

Figure 4.18 Scatter diagram showing distribution of sample as per correlation between Knowledge and attitude.

Section IX

Finding related to association between pretest level of knowledge on care of low birth-weight babies among mothers with selected demographic variables.

Table 4.21 Chi square test showing association of knowledge regarding care of low birth weight babies among mother of low-birth-weight babies and their selected demographic variables

Socio-demographical variables		Pretest Level of knowledge			Calculated Chi square value	DF	P value	Result
		Poor	Average	Good				
Age of the mother	18–25 years	27	13	0	0.263	2	0.87	NS
							7	
	26–30 years	6	4	0				
	31–35 years	0	0	0				
	Above 35 years	7	3	0				
Occupation of the mother	Housewife	40	20	0	-	-	-	-
	Daily wage worker	0	0	0				
	Private job	0	0	0				
	Government employee	0	0	0				
Type of Family	Nuclear family	27	13	0	0.038	1	0.84 6	NS
	Joint family	13	7	0				
Residence	Rural	31	14	0	0.400	1	0.52 7	NS
	Urban	9	6	0				
Parity (Number of Children)	Primipara (First child	20	10	0	0.001	2	1.000	NS
	Multipara (More than	8	4	0				
	one child							
	Grand multipara (More than five children)	12	6	0				
Gestational Age of Baby at	Less than 32 weeks	23	7	0	3.000	2	0.223	NS

Birth	32–36 weeks	12	8	0				
	37–40 weeks	5	5	0				
	Above 40 weeks	0	0	0				
Religion	Hindu	10	8	0	1.429	1	0.232	NS
	Muslim	30	12	0				
	Christian	0	0	0				

S = P value significant at 0.05 level of significance
NS = P value non-significant at 0.05 level of significance

SECTION X
Finding related to association between pretest level of attitude on care of low birth-weight babies among mothers with selected demographic variables.

Table 4.22 Chi square test showing association of attitude regarding care of low birth weight babies among mother of low-birth-weight babies and their selected demographic variables.
(N=60)

Socio-demographical variables		**Pretest Level of attitude**			**Calculated Chi square value**	**DF**	**P value**	**Result**
		Unsatisfied	Neutral	Highly satisfied				
Age of the mother	18–25 years	32	4	4	5.147	4	0.273	NS
	26–30 years	6	1	3				
	31–35 years	0	0	0				
	Above 35 years	5	2	3				
Occupation of the mother	Housewife	43	7	10	-	-	-	-
	Daily wage worker	0	0	0				
	Private job	0	0	0				
	Government employee	0	0	0				
Type of Family	Nuclear family	30	4	6	0.672	2	0.715	NS
	Joint family	13	3	4				
Residence	Rural	32	5	8	0.189	2	0.910	NS
	Urban	11	2	2				
Parity (Number of Children)	Primipara (First child	24	3	3	2.817	4	0.589	NS
	Multipara (More than one Child	8	1	3				
	Grand multipara (More than five children)	11	3	4				
Gestational Age of Baby at	Less than 32 weeks	22	4	4	0.566	4	0.967	NS
	32–36 weeks	14	2	4				

Birth	37–40 weeks	7	1	2				
	Above 40 weeks	0	0	0				
Religion	Hindu	15	0	3	3.488	2	0.175	NS
	Muslim	28	7	7				
	Christian	0	0	0				

S = P value significant at 0.05 level of significance NS = P value non-significant at 0.05 level of significance

DISCUSSION

The present study assessed the effectiveness of a structured teaching program on knowledge and attitude regarding care of low birth weight (LBW) babies among mothers of LBW babies at a selected hospital in Meerut. The findings showed that **pre-test knowledge and attitude scores were low**, indicating that mothers lacked adequate awareness regarding care of LBW babies (feeding, thermal protection, infection prevention, immunization, etc.). After administering the **structured teaching program (STP)**, there was a significant improvement in both **knowledge and attitude scores**, as confirmed by the paired t-test. These results are in line with similar studies conducted in India and abroad which reported that structured education improves maternal competency and neonatal outcomes.

CONCLUSION

The study concluded that the **structured teaching program was effective** in enhancing the knowledge and improving the attitude of mothers regarding the care of low birth weight babies. Empowering mothers through education can significantly contribute to reducing neonatal morbidity and mortality. Therefore, structured teaching should be incorporated into routine maternal and child health services

LIMITATIONS

The sample size was small (N=60) and selected using purposive sampling. Only knowledge and attitude were assessed. The study did not include a control group, so comparative effectiveness could not be established. The study included only mothers who could read and comprehend Hindi, excluding illiterate mothers.

RECOMMENDATION

The study can be replicated with a larger sample size across multiple hospitals to enhance generalizability. A true experimental design can be used in future studies with control and intervention groups for more rigorous evaluation. Follow-up studies can be conducted to assess the long-term retention of knowledge and attitude among mothers.

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