

A Study to Assess the Effectiveness of A Structured Teaching Program on Knowledge Regarding the Care of Low-Birth-Weight Babies Among Mothers in Selected Hospitals in Indore, M.P.

Priyanka Chouhan¹, Jayshree², Sonu³, Sunita Dodawa⁴

¹B.Sc. Nursing Tutor, Renaissance University School of Nursing, Indore (MP).

^{2,4}Student, B.Sc. Nursing final year batch 2020-2024, Renaissance University School of Nursing, Indore (MP).

³Student, GNM final year batch 2020-2023, Renaissance University School of Nursing, Indore (MP).

Abstract

A quasi-experimental study with a pretest-posttest design without a control group was undertaken on 60 mothers selected by purposive sampling to assess the effectiveness of a teaching program on the home management of low-birth-weight (LBW) babies. Results revealed that 47% of the mothers were in the age group of 21-25 years, and 46% were in the age group of 26-30 years. The overall mean knowledge score in the pretest was 13.34 ± 3.25 , while in the posttest it was 24.18 ± 3.09 , revealing a 31.89% increase in knowledge scores.

Keywords: low birth weight, infant survival

Background of the Study

Low birth weight (LBW) is a significant determinant of infant mortality and morbidity, particularly in developing countries where the prevalence ranges from 20-40%. LBW infants are at higher risk of health complications such as mental retardation, infections, and growth delays. The average weight of a newborn typically falls between 2.5 to 3 kg, with various factors influencing birth weight including maternal health, antenatal care, and intrauterine growth. Enhancing mothers' knowledge and skills in managing LBW babies is crucial for improving infant health outcomes. Structured teaching programs can empower mothers with the necessary knowledge and practices to effectively care for their LBW infants, promoting better health and survival rates.

Need for the Study

Globally, more than 20 million infants are born with low birth weight. In developing countries, 72% of LBW infants are born, and in places like Rajkot, only 48.32% of deliveries are institutional or home-based. Properly trained mothers can effectively care for LBW babies, which helps establish a strong mother-child bond and promotes exclusive breastfeeding. Teaching programs are essential to improve

mothers' knowledge of child-rearing practices for LBW babies.

Problem Statement

A study to assess the effectiveness of a structured teaching program on knowledge regarding the care of low-birth-weight babies among mothers in selected hospitals in Indore, M.P.

Objectives

1. To assess the knowledge of mothers regarding the care of LBW babies before implementing the teaching program.
2. To evaluate the effectiveness of the teaching program regarding the care of LBW babies.
3. To compare the effectiveness of the teaching program with demographic variables.
4. To find the significant difference between pretest and posttest knowledge scores of mothers.
5. To find the association between pretest knowledge scores of mothers and their demographic variables.

Hypothesis

H_0 (Null Hypothesis): There is no significant difference in the knowledge scores of mothers regarding the care of low-birth-weight babies before and after the implementation of the structured teaching program.

H_1 (Alternative Hypothesis): There is a significant difference in the knowledge scores of mothers regarding the care of low-birth-weight babies before and after the implementation of the structured teaching program.

Research Design and Approach

A quasi-experimental research design with a pretest-posttest approach, without a control group, was used to evaluate the effectiveness of a teaching program on the care of LBW babies. Sixty mothers were selected from the village using purposive sampling.

Methodology - A quasi-experimental study was conducted using a pretest-posttest design without a control group to evaluate the effectiveness of a structured teaching program on the care of low-birth-weight (LBW) babies among mothers. The study included 60 mothers selected through purposive sampling from selected hospitals in Indore, M.P.

Study Design:

- Design: Quasi-experimental, pretest-posttest without control group.
- Participants: 60 mothers of LBW babies.
- Sampling Technique: Purposive sampling.

Tools:

- Demographic Proforma: Collected data on age, religion, educational qualification, and type of family.
- Knowledge Questionnaire: Assessed mothers' knowledge on the care of LBW babies before and after the intervention.
- Teaching Program: Provided structured education on the care of LBW babies.

Data Collection:

- Pretest: Assessed baseline knowledge of mothers.
- Intervention: Implemented the structured teaching program.
- Posttest: Evaluated the improvement in knowledge after the teaching program.

Data Analysis:

- Statistical Tests: Descriptive statistics, paired t-test, and Chi-square test were used to analyze the data.

Results

Demographic Characteristics

S.No	Demographic Variables	Frequency	Percentage (%)
1	Age		
	<30	23	38.33
	30-35	22	36.67
	36-40	10	16.67
	≥41	5	8.33
2	Religion		
	Hindu	35	58.33
	Christian	4	6.67
	Muslim	21	35
3	Educational Qualification		
	Primary	50	83.33
	Graduate	10	16.67
	Postgraduate and above	0	0
4	Type of Family		
	Nuclear	40	66.67
	Joint	20	33.33
	Extended	0	0

Association Between Pretest Knowledge and Demographic Variables

Demographic Variables	Chi-Square Value	df	p-value	Inference
Age	0.102	1	0.749	NS
Religion	1.071	1	0.301	NS
Educational Qualification	0	1	1	NS
Type of Family	1.071	1	0.301	NS

Note: Table value = 3.84

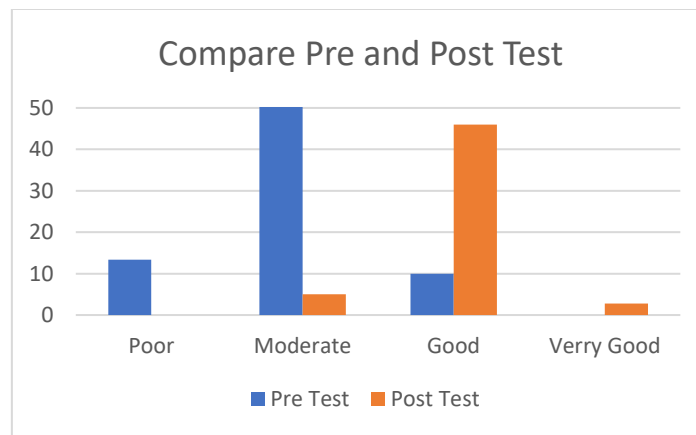
Findings:

- Pretest Mean Knowledge Score: 13.34 ± 3.25
- Posttest Mean Knowledge Score: 24.18 ± 3.09
- Increase in Knowledge Scores: 31.89%
- t-value: 19.795 (significant improvement, $p < 0.05$)

Graph: Comparison of Pretest and Posttest Knowledge

Score

Range of Score	Level of Knowledge	Pretest	Posttest	t-test
0-5	Poor	8 (13.33%)	0 (0%)	19.79
6-10	Moderate	46 (76.67%)	5 (8.33%)	
11-15	Good	6 (10%)	46 (76.67%)	
16-20	Very Good	0 (0%)	9 (15%)	



This graph shows a comparison of pre-test and post-test knowledge scores, divided into four groups: Poor, Moderate, Good, and Very Good.

In the pre-test:

- 8 participants were in the Poor group,
- 46 participants were in the Moderate group,
- 6 participants were in the Good group,
- and no participants were in the Very Good group.

In the post-test:

- 0 participants were in the Poor group,
- 5 participants were in the Moderate group,
- 46 participants were in the Good group,
- and 9 participants were in the Very Good group.

Thus, the structured teaching program effectively enhanced the participants' knowledge.

Discussion

The study revealed that the structured teaching program significantly improved the knowledge of mothers regarding the care of LBW babies. The majority of the participants were under 30 years old and

primarily Hindu. Most had only primary education and came from nuclear families. The posttest knowledge scores showed a marked improvement compared to pretest scores, indicating the effectiveness of the teaching program. There was no significant association between the mothers' demographic variables and their knowledge levels.

Conclusion

The structured teaching program effectively enhanced the mothers' knowledge regarding the care of low-birth-weight babies. The significant improvement in posttest knowledge scores highlights the importance of educational interventions in promoting better health practices among mothers. The pretest knowledge level was mostly average or poor, while the posttest knowledge level showed significant improvement, with a majority achieving good or very good scores.

References

1. Hockenberry, M. J. (2015). *Essentials of Pediatric Nursing* (17th ed.). New Delhi: Elsevier.
2. Brazelton, T. B. (1962). A child-oriented approach to toilet training. *Pediatrics*, 29, 121–8.
3. Spock, B. (1968). *Baby and Child Care*. New York, NY: Meredith Press.
4. Foxx, R. M., & Azrin, N. H. (1973). Dry pants: a rapid method of toilet training children. *Behavior Research and Therapy*, 11, 435–42.
5. Butler, J. F. (1976). The toilet training success of parents after reading *Toilet Training in Less than a Day*. *Behavior Therapy*, 7, 185–91.
6. Sun, M., & Rugolotto, S. (2004). Assisted infant toilet training in a Western family setting. *Journal of Developmental & Behavioral Pediatrics*, 25, 99–101.
7. Vermandel, A., Weyler, J., De Wachter, S., et al. (2008). Toilet training of healthy young toddlers: a randomized trial between a daytime wetting alarm and timed potty training. *Journal of Developmental & Behavioral Pediatrics*, 29, 191–6.
8. Lucas A, Cole TJ. Breast milk and neonatal necrotising enterocolitis. *Lancet*, 1990, 336:1519-1523. [PubMed]
9. Mukhopadhyay K, Narnag A, Mahajan R. Effect of human milk fortification in appropriate for gestation and small for gestation preterm babies: a randomized controlled trial. *Indian Pediatrics*, 2007, 44:286-290. [PubMed]
10. Polberger SK, Axelsson IA, Raiha NC. Growth of very low birth weight infants on varying amounts of human milk protein. *Pediatric Research*, 1989, 25:414-419. [PubMed]
11. Hylander MA, Strobino DM, Dhanireddy R. Human milk feedings and infection among very low birth weight infants. *Pediatrics*, 1998,102:E38. [PubMed]
12. Schanler RJ, Shulman RJ, Lau C. Feeding strategies for premature infants: beneficial outcomes of feeding fortified human milk versus preterm formula. *Pediatrics*, 1999,103:1150-1157. [PubMed]
13. Sisk PM, et al. Early human milk feeding is associated with a lower risk of necrotizing enterocolitis in very low birth weight infants. *Journal of Perinatology*, 2007, 27:428-433. [PubMed]
14. Henderson G et al. Enteral feeding regimens and necrotising enterocolitis in preterm infants: a multicentre case-control study. *Archives of Disease in Childhood Fetal and Neonatal Edition*, 2009,94:F120-123. [PubMed]
15. Levy I, et al. Urinary tract infection in preterm infants: the protective role of breastfeeding. *Pediatric Nephrology*, 2009, 24:527-531. [PubMed]

16. Doyle LW, et al. Breastfeeding and intelligence. *Lancet*, 1992, 339:744-745. [PubMed]
17. Morley R et al. Mother's choice to provide breast milk and developmental outcome. *Archives of Disease in Childhood*, 1988, 63:1382-1385. [PMC free article] [PubMed]
18. Morley R, et al. Neurodevelopment in children born small for gestational age: a randomized trial of nutrient-enriched versus standard formula and comparison with a reference breastfed group. *Pediatrics*, 2004, 113:515-521. [PubMed]
19. Nicholl RM, Gamsu HR. Changes in growth and metabolism in very low birthweight infants fed with fortified breast milk. *Acta Paediatrica*, 1999, 88:1056-1061. [PubMed]
20. McIntosh N, De Curtis M, Williams J. Failure of mineral supplementation to reduce incidence of rickets in very-low-birthweight infants. *Lancet*, 1986, 2:981-982. [PubMed]
21. Lucas A, et al. Early diet in preterm babies and developmental status in infancy. *Archives of Disease in Childhood*, 1989, 64:1570-1578. [PMC free article] [PubMed]
22. Franz AR, et al. Prospective randomized trial of early versus late enteral iron supplementation in infants with a birth weight of less than 1301 grams. *Pediatrics*, 2000, 106:700-706. [PubMed]
23. Arnon S, et al. The efficacy and safety of early supplementation of iron polymaltose complex in preterm infants. *American Journal of Perinatology*, 2007, 24:95-100. [PubMed]
24. Sankar MJ, et al. Early iron supplementation in very low birth weight infants--a randomized controlled trial. *Acta Paediatrica*, 2009, 98:953-958. [PubMed]
25. Lundstrom U, Siimes MA, Dallman PR. At what age does iron supplementation become necessary in low-birth-weight infants? *Journal of Pediatrics*, 1977, 91:878-883. [PubMed]