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Effectiveness of Structured Teaching Programme on Knowledge and Practice of Mothers regarding Feeding Practice of Low Birth Weight Newborns in NICU, KGMU

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Abstract: ***Background: LBW is a global public health challenging problem. Optimal feeding practices is of great significance or value for babies not because they need special care but because it is the critical time when their brain (80-85%) grows faster and maximum. Aim: To assess the effectiveness of structured teaching programme on knowledge and practice of mothers regarding feeding practice of low birth weight newborns in NICU, KGMU. Material and methods: In this study the research approach was quasi experimental "one group pre test post test" performed on 60 mothers of low birth weight newborns selected by purposive sampling technique. The intervention Structured Teaching Programme was introduced to the group after the pre test. Knowledge was assessed by self structured questionnaire and practice assessed by observation checklist tool before and after the intervention. Results: The result revealed that mean pre test score of knowledge was 10.20±2.98 which was increased to 15.62±1.80. The mean difference was 5.42 The obtained t' value 18.346 was statistically highly significant at (p<0.001) level. And mean pre test score of practice was 12.13±3.28 which was increased to 18.87 ±3.12. The mean difference was 6.73. The obtained 't' value 19.889 was statistically highly significant at (p<0.001) level. Conclusion: The study concluded that, structured teaching programme was significantly effective in increasing the knowledge and improving the practice of mothers regarding feeding practice of low weight newborns.***

Keywords: Effectiveness, Structured Teaching Programme, Feeding practice, low birth weight newborns, Knowledge, Practice

1. Introduction

Low birth weight (LBW) is babies who are born weighing less than 2500 grams.[1] LBW is a global public health challenging problem. Its high priority stems from the fact that it is the major determinant of infant morbidity and that it contributes markedly to the overall burden of childhood death. Risk factor that is associated to low birth weights are lacking nutrition counselling during pregnancy, lacking iron/folic acid supplementation during pregnancy, not taking snacks during pregnancy, maternal under-nutrition, maternal anaemia and inadequate minimum dietary diversity score of women (MDDS-W).[2]

"Breast is best" for babies and is a worldwide concept. Breast feeding saves up to 6 million baby lives every year and is the infant's first immunization against infectious diseases.[3] It is a main practice for appropriate care and feeding of newborns and has nutritional, immunological, developmental, psychological, social, economic and environmental benefits for infants, mothers, families and society. [4]

Birth weight or size at the time of birth is a important indicator that the child may be vulnerable to the risk of childhood illnesses and to predict future health of the child, development, and the chances of survival.[5] So, Low birth weight is considered as the single most important predictor of infant mortality, especially of deaths within the first months of life. [6] These low-birth-weight (LBW) infants are at increased risk of early growth retardation, infectious disease, developmental delay and death during infancy and childhood. [7] Globally, 60–80% of neonatal deaths occur among low birth weight infants. [8] Worldwide more than 20 million low birthweight occur annually with the incidence of 15 to 20%, majority of this occur in low- and middle-income countries and 95.6% occur in developing nations. [9]

Low birth weight (LBW) infants need optimal nutrition during the neonatal period for proper growth and development. Appropriate feeding of low birth weight and very low birth weight infants improves their chances of survival and is important for their optimum growth and development. [10] Feeding practices for low-birth weight infants include early initiation of breastfeeding when possible, breast milk feeding through other means until breastfeeding is possible, exclusive breastfeeding until 6 months of age, and continued breastfeeding up to 2 years and beyond. These helps in ensuring responsive care and healthy growth and development of low- birthweight infants.[11]

First hour initiation is practiced less than 50% mothers in india, whereas the rate of exclusive breastfeeding in the first six months stands by 55%. This early initiation of breastfeeding and exclusive breastfeeding can help to prevent nearly 99,499 deaths of children. Five countries -

China, India, Indonesia, Mexico, Nigeria – account for over 2,36,000 child death every year because of inadequate breastfeeding [12] The problems in low birth weight infants who cannot be directly breast fed because breast milk does not come out or the baby's body is small and weak that so he cannot suck the mother nipple, because of the low weight they are fed through express breast milk practice.[13] Breast milk expression has proven to be helpful in establishing and continuing the breast feeding. One of the main reasons for low expression of breast milk is lack of adequate information and appropriate knowledge about Expression of breast milk. So, it is important that all mothers should have adequate scientific knowledge about expression of breast milk so that she will be able to prevent / correct the problems if any and increase the milk supply to prevent malnutrition. [14]

Statement of the Problem

"Effectiveness of Structured Teaching Programme on knowledge and practice of mothers regarding feeding practice of low birth weight newborns in NICU, KGMU"

Objectives of the Study

- To assess the knowledge and practice score of Mothers regarding feeding practice of low birth weight newborns before and after administration of structured teaching programme.
- To compare the knowledge and practice score of mothers regarding feeding practice of low birth weight newborns before and after administration of structured teaching programme
- To find out the association in knowledge and practice score of mothers regarding feeding practice of low birth weight newborns and their selected demographic variables before the administration of structured teaching programme.

Hypothesis

- $\mathbf{H_0}$ - There will be no significant difference in knowledge and practice score of Mothers regarding feeding practice of low birth weight newborns before and after administration of structured teaching programme.
- $\mathbf{H_1}$ - There will be significant difference in knowledge and practice score of Mothers regarding feeding practice of low birth weight newborns before and after administration of structured teaching programme.
- $\mathbf{H_2}$- There will be significant association in knowledge and practice score of Mothers regarding feeding practice of low birth weight newborns with there selected demographic variable before the administration of structured teaching programme.

2. Methods

In this study the research approach was quasi experimental one group pre-test post-test design was applied. Total 60 samples selected by purposive sampling technique. The intervention Structured Teaching Programme was introduced to the group after the pre test. Knowledge was assessed by self structured questionnaire and practice assessed by observation checklist tool before and after the intervention. This study was conducted in selected NICU at KGMU Hospital, Lucknow.

Criteria for Samples Selection:

a) Inclusion criteria

- Babies whose birth weight is between 1800- 2500 grams with gestational age >34 weeks
- Mature sucking pattern
- Babies who are coordinating between breathing and swallowing
- The postnatal mothers
- Who are willing to participate in the study
- Who can understand Hindi.

b) Exclusion Criteria

- Mothers of full term and normal weight newborns.
- Sick mothers with cracked nipple.
- Newborns in ventilatory support.

Description of Tool

Part I: -Socio demographic variables
Part II: - Knowledge Questionnaire
• **Poor** - 0-7
• **Average** - 8-14
• **Good** - 15-20

Part III: - Observational Checklist
• **Poor** - 0-9
• **Average** - 10-18
• **Good** - 19-26

These gradings are purely for this research study only.

Structured teaching programme on feeding practice

In this study it consist information about first hour initiation of breast feeding, advantages of colostrum, position of the mother and baby, demand feeding, exclusive breast feeding.

Reliability

The split half method was used for analysis of reliability for self structured knowledge questionnaire after pilot testing was 0.7608 and for observational checklist reliability is 0.74055. The tools were found to be reliable.

Data collection procedure

First of all ethical permission was obtained from the ethics committee of KGMU, Lucknow. After getting the ethical clearance, formal permission were taken from the Head of Department of Pediatrics. The data collection period started from 4th November 2019 to 31st January 2020 to complete. The sample was taken by non- probability purposive sampling technique and all the potential participants matching the inclusion and exclusion criterion. Self-introduction was given to the participants. After that purposes and benefits of the study were explained to the participants and informed consent was taken. Questions were explained to the participants if any of the participants was not able to understand. Then, pre test was taken and interventional teaching was given to the participants on the

same day. Post-test was conducted after 7 days of intervention.

Plan for data analysis

Statistical analysis is the organization and analysis of quantities data using statistical procedures including both descriptive and inferential statistics.

3. Result

Section I: - Description of demographic variables of of mothers

Table 1: Frequency and percentage distribution of mothers of low birth weight according to their demographic variables

Variable	f	%
Age Group (in years):		
≤20 yrs	2	3.3
21-25	30	50.0
26-30	24	40.0
>31 yrs	4	6.7
No. of children		
One	26	43.3
Two	26	43.3
Three	7	11.7
Four or more	1	1.7
Gestational age		
34-35 wks	13	21.7
35-36 wks	28	46.7
36-37 wks	19	31.7
Religion		
Hindu	43	71.7
Muslim	17	28.3
Residence		
Rural	21	35.0
Urban	39	65.0
Educational Status		
Illiterate	3	5.0
Primary	8	13.3
Secondary	21	35.0
Graduate & above	28	46.7
Type of family		
Nuclear	17	28.3
Joint	43	71.7
Occupation		
Housewife	58	96.7
Private Job	2	3.3
Monthly Income		
<12000	39	65.0
12000-50000	19	31.7
>1 lakh	2	3.3
Type of delivery		
Normal	31	51.7
C-section	29	48.3

Section II:- Findings on knowledge regarding feeding practice of low birth newborns

Table 2: Mean, standard deviation, mean difference and 't' value of overall pre test and post test level of knowledge regarding feeding practice of low birth newborns

Overall	Total Score			Paired 't' test	
	Mean	SD	Mean difference	t value	p value
Pre test	10.20	2.98	5.42	18.346	<0.001
Post test	15.62	1.80			

Table No. 2 Reveals that the mean pre test score of knowledge was 10.20±2.98 which was increased to 15.62±1.80 after post test. The mean difference was 5.42. The obtained 't' value '18.346' was statistically highly significant at ($p<0.001$) level which rejects the null hypothesis and accepts the research hypothesis that there will be significant difference in knowledge score regarding feeding practice of low birth weight newborns.

Section III: Comparison of knowledge score of mothers regarding feeding practice of low birth weight newborns before and after administration of structured teaching programme

Table 3: Categories wise overall pre test and post test comparison of knowledge regarding feeding practice based on total score

Knowledge Level	Pre test		Post test	
	f	%	*f*	%
Poor	16	26.7	-	-
Average	38	63.3	18	30.0
Good	6	10.0	42	70.0
Total Score	60	100.0	60	100.0

Table 3: Reveals decline in proportion of respondents with overall Poor knowledge (26.7% to 0.0%) and Average knowledge (63.3% to 30.0%) and increment in Good (10.0% to 70.0%) level of overall knowledge was observed .

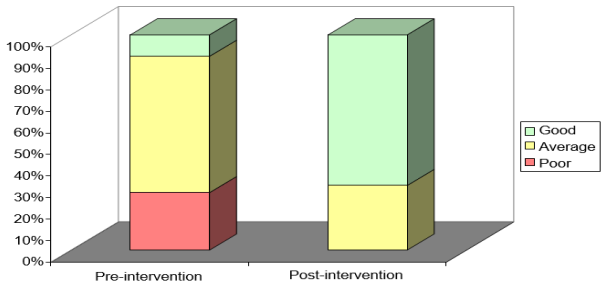

Figure 1: Categories wise overall pre test and post test comparison of knowledge regarding feeding practice of low birth weight newborns based on total score.

Table 4: Mean, standard deviation, mean difference and 't' value of overall pre test and post test level of practice among caregivers.

Overall	Total Score			Paired 't' test	
	Mean	SD	Mean difference	t value	p value
Pre test	12.13	3.28	6.73	19.889	<0.001
Post test	18.87	3.12			

Table 4: Reveals that mean pre test score of practice was 12.13±3.28 which was increased to 18.87±3.12 after post test. The mean difference was 6.73. The obtained 't' value '19.889' was statistically highly significant at ($p<0.001$) level which rejects the null hypothesis and accepts the research hypothesis that there will be significant difference in knowledge score regarding feeding practice of low birth weight newborns.

Section IV:- Comparison of Practice score of mothers regarding feeding practice of low birth weight newborns before and after administration of structured teaching programme

Table 5: Categories wise overall pre test and post test comparison of practice regarding feeding practice based on total score

Practice Level	Pre test		Post test	
	f	%	f	%
Poor	15	25.0	0	0.0
Average	43	71.7	26	43.3
Good	2	3.3	34	56.7
Total Score	60	100.0	60	100.0

Table 5. Reveals that among 60 mothers, Decline in proportion of respondents with overall Poor practice level (25.0% to 0.0%) and Average practice (71.7% to 43.3%) and increment in Good (3.3% to 56.7%)level of overall practice was observed. Change in Overall practice level was found to be significant statistically.

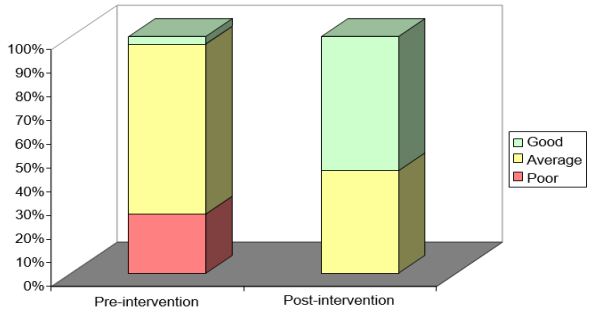

Figure 2: Categories wise overall pre test and post test comparison of practice regarding feeding practice of low birth weight newborns based on total score.

Section V:- Association of knowledge score of Mothers and their selected socio demographic variables before the administration of structured teaching programme

Table 6: Distribution of association of knowledge with selected demographic variable before administration of structured teaching programme

Variable	Poor level Score 0-7 (n=16)		Average level Score 8-14 (n=38)		Good level Score 15-20 (n=6)		p value	χ^2
	f	%	*f*	%	*f*	%	-	-
Age								
15-17 yr	1	50.0	0	0.0	1	50.0	0.327	6.926 NS
18-20 yr	9	30.0	19	63.3	2	6.7		
21-24 yr	5	20.8	17	70.8	2	8.3		
>31 yrs	1	25.0	2	50.0	1	25.0		
No. of children								
One	7	26.9	16	61.5	3	11.5	0.665	4.088 NS
Two	9	34.6	15	57.7	2	7.7		
Three	0	0.0	6	85.7	1	14.3		
Four or more	0	0.0	1	100.0	0	0.0		
Gestational age								
34-35 wks	3	23.1	7	53.8	3	23.1	0.24	4.213 NS
35-36 wks	7	25.0	20	71.4	1	3.6		
36-37 wks	6	31.6	11	57.9	2	10.5		
Religion								
Hindu	12	27.9	26	60.5	5	11.6	0.709	0.687
Muslim	4	23.5	12	70.6	1	5.9		NS
Residence								
Rural	6	28.6	14	66.7	1	4.8	0.610	0.987 NS
Urban	10	25.6	24	25.6	5	12.8		
Education								
Illiterate	2	66.7	1	33.3	0	0.0	0.393	0.277 NS
Primary	4	50.0	3	37.5	1	12.5		
Secondary	5	23.8	14	66.7	2	9.5		
Graduate +	5	17.9	20	71.4	3	10.7		
Type of family								
Nuclear	5	29.4	11	64.7	1	5.9	0.788	0.476 NS
Joint	11	25.6	27	62.8	5	11.6		
Occupation								
Housewife	16	27.6	36	62.1	6	10.3		
Private Job	0	55.1	13	42.9	1	2.0	0.549	1.198 NS
Monthly Income								
<12000	13	33.3	23	59.0	3	7.7	0.204	5.934 NS
12000-50000	3	15.8	14	73.7	2	10.5		
>1 lakh	0	0.0	1	50.0	1	50.0		
Type of delivery								
Normal	12	38.7	17	54.8	2	6.5	0.081	5.027 NS
C-Section	4	13.8	21	72.4	4	13.8		

Table 6. The researcher calculated the values of chi square in order to find out the association of pre-intervention knowledge and None of variables has significant association with socio demographic variables. The calculated value was higher than the tabulated value.

Section-:VI Association of practice score of Mothers and their selected socio demographic variables before the administration of structured teaching programme.

Table 7: Distribution of association of practice with selected demographic variable before administration of structured teaching programme

Variable	Poor level Score 0-9 (n=15)		Average level Score 10-18 (n=43))		Good level Score 19-26 (n=2)		p value	χ^2
	f	%	*f*	%	*f*	%	-	-
Age								
15-17 yr	1	50.0	1	50.0	0	0.0	0.344	6.744 NS
18-20 yr	5	16.7	25	83.3	0	0.0		
21-24 yr	7	29.2	15	62.5	2	8.3		
>31 yrs	2	50.0	2	50.0	0	0.0		
No. of children								
One	5	19.2	21	80.8	0	0.0	0.521	5.179 NS
Two	8	30.8	17	65.4	1	3.8		
Three	2	28.6	4	57.1	1	14.3		
Four or more	0	0.0	1	100.0	0	0.0		
Gestational age								
34-35 wks	5	38.5	7	53.8	1	7.7	0.502	3.343 NS
35-36 wks	6	21.4	21	75.0	1	3.6		
36-37 wks	4	21.1	15	78.9	0	0.0		
Religion								
Hindu	9	23.3	32	74.4	1	2.3	0.668	0.807 NS
Muslim	6	29.4	11	64.7	1	5.9		
Residence								
Rural	6	23.7	15	71.4	0	0.0	0.537	0.242 NS
Urban	9	28.6	28	73.7	2	5.3		
Education								
Illiterate	1	33.3	2	66.7	0	0.0	0.718	3.695 NS
Primary	3	37.5	5	62.5	0	0.0		
Secondary	6	28.6	15	71.4	0	0.0		
Graduate +	5	17.9	21	75.0	2	7.1		

Type of family								
Nuclear	3	17.6	13	76.5	1	5.9	0.591	1.052 NS
Joint	12	27.9	30	69.8	1	2.3		
Occupation								
Housewife	14	24.1	36	62.1	2	3.4		
Private Job	1	50.0	13	42.9	0	0.0	0.697	0.722 NS
Monthly Income								
<12000	12	30.8	26	66.7	1	2.6	0.642	2.513 NS
12000-50000	3	15.8	5	78.9	1	10.5		
>1 lakh	0	0.0	2	100.0	0	0.0		
Type of delivery								
Normal	7	22.6	23	74.2	1	3.2	0.901	0.210 NS
C-Section	8	27.6	20	69.0	1	3.4		

Table 7: The researcher calculated the values of chi square in order to find out the association of pre-intervention practice and None of variables has significant association with socio demographic variables. The calculated value was higher than the tabulated value.

4. Discussion

As the above study showed that there were highly significantly changes in knowledge and practice score regarding regarding feeding practice of low birth weight newborns before and after administration of structured teaching programme. So the findings are correlated with following literature. **Harshita Prabhakaran (2015)** conducted a pre-experimental study to evaluate the effectiveness of the structured teaching programme regarding care of low birth weight babies in terms of knowledge of postnatal mothers in Choithram Hospital & Research Centre & Mission hospital, Indore. Total 30 postnatal mothers were selected by purposive sampling technique who met the inclusion and exclusion criteria. A pre-test was administered by structured interview schedule for knowledge of mothers followed by structured teaching programme through the pamphlet. Posttest was conducted after 7 days. The findings revealed that the mean post-test knowledge score (17.6) is significantly higher than the mean pretest knowledge score (10.8) with SD of 1.33 and the t -test value was 67.6 which is statistically significant at p <0.001 level of significance. The findings of the study imply hat the structured teaching programme is an effective strategy in enhancing the knowledge of mothers regarding care of low birth weight babies. [15]

K Nagendra (2017) conducted a interventional study on Evaluation of breast feeding techniques among postnatal mothers in tertiary care centre. 355 sample were selected through Convenience sampling technique and the data was collected through observation over 24 hours. The result showed that on initial observation, 67% mothers had correct positioning and 53% babies had correct attachment only 43% mothers and babies had both correct positioning and attachment while BF. After the intervention, more than 97% of mothers were able to attach their babies well and 98% were able to position their babies correctly (p<0.0001).

5. Conclusion

The study showed that structured teaching programme invented by the researcher was effective to increase the knowledge and improve practice regarding feeding practice of low birth weight newborns in NICU. hence it is recommended that health care provider should provide health education and demonstration to mothers regarding feeding of low birth weight newborns. so it will help to improve the skills of mother, and prevent complications for child.

(**Ho**) is rejected and alternative hypothesis (**H1**) is accepted that structured teaching programme on knowledge and practice of mothers regarding feeding of low birth weight newborns.

Recommendations

Following study can be undertaken in relation to present study.

- A similar study can be replicated by taking larger sample to validate and for better generalization of the findings
- A similar study may be repeated with a control group for more generalization.
- A follow up study is needed to assess the knowledge and practices of mothers regarding care of low birth weight

References

[1] www.schneiderchildrenshospital.org/.../hr newborn/lbw.htm
[2] Zeritu Dewana, Genet Gedamu, Desta Haftu, Eskeziyaw Agdew, Teshale Fikadu, Shimelis Girma et.al "Factors associated with low birthweight among newborns delivered at public health facilities of Nekemte town, West Ethiopia: a case control study", BMC Pregnancy and Childbirth(2019) ;:1-19
[3] Nawale Anita, Mahan Mamta, Knowledge and practice regarding lactation management among the post-natal mothers in selected hospital of Pune city. 2017 july; 4: 259-261
[4] Singh Satyavir, Parashar Mamta Breastfeeding Attachment and Positioning Technique, Practices, and Knowledge of Related Issues Among Mothers in a Resettlement Colony of Delhi, ICAN Infant Child & Adolescent Nutrition 2015;20: 1-9
[5] S. K. Sebayang, M. J. Dibley, P. J. Kelly, A. V. Shankar, "Determinants of low birthweight, small-for-gestational-age and preterm birth in Lombok, Indonesia: analyses of the birthweight cohort of the SUMMIT trial," Tropical Medicine & International Health. 2012;17(8): 938–950
[6] K. Zenebe, T. Awoke, N. Birhan, "Low birth weight and associated factors among newborns in Gondar Town, Northwest Ethiopia" Indo Global Journal of Pharmaceutical Sciences. 2014;4(2):74–80
[7] https://www.who.int/elena/titles/supplementary_feeding /en/
[8] S. K. Sebayang, M. J. Dibley, P. J. Kelly, A. V. Shankar, and A. H. Shankar, "Determinants of low birthweight, small-for-gestational-age and preterm birth in Lombok, Indonesia: analyses of the birthweight

cohort of the SUMMIT trial" Tropical Medicine & International Health. 2012;17(8):938–950.

[9] Zeritu Dewana, Genet Gedamu, Desta Haftu, Eskeziyaw Agdew, Teshale Fikadu, Shimelis Girma et al. "Factors associated with low birthweight among newborns delivered at public health facilities of Nekemte town, West Ethiopia: a case control study" BMC Pregnancy and Childbirth. 2019;19: 1-19

[10] Naik Dayanad Jayashree, BK Radha, Prabhu Mohan Priya. "Knowledge, Attitude and Practice of Expression of Breast Milk among Mothers , journal of medical science and clinical research. 2016;4: 8828 -8834 https://www.mcsprogram.org/

[11] Dey Sushmi. "India ranks low on breastfeeding practices" India News - Times of India. Aug 3 2017;

[12] Gupta Arun etal, Infant and Young Feeding Practices in India: Current Status and Progress Towards SDG Targets, Proc Indian Natn Sci Acad. Dec 2018;84(4):853-865

[13] N Dayanad Jayashree, BK Radha, Prabhu Mohan Priya. "Knowledge, Attitude and Practice of Expression of Breast Milk among Mothers , journal of medical science and clinical research, vol 4 (2016)Page 8828 -8834

[14] P Harshita Enhancing maternal knowledge in improving life of low birth weight babies, IOSR Journal of Nursing and Health Science, 2015 Aug; 4(4): 71-77

[15] Nagendra K, Shetty Nanjappa Pradeep, Rudrappa Sudha, Jaganath Sneha, Nair Reshma."Evaluation of breast feeding techniques among postnatal mothers and effectiveness of intervention :Experience in a tertiary care centre" Sri Lanka Journal of Child Health, 2017; 46: 39-43