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Efficacy of educational package regarding feeding practices in low birth weight neonates among nursing undergraduates

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Abstract

Background: Lack of attention at feeding aspect among LBW neonates may results in hypoglycaemia, infections, convulsion, aspiration, and other complications.Therefore, present study aims to improve knowledge of nursing undergraduates by giving them educational package on feeding practices in low birth weight neonates to reduce complications and improvement in weight gain of neonates. **Method**: Quantitative pre experimental research design was utilized in the current study project. Fifty nursing undergraduates were selected for the study as samples by utilizing non probability purposive sampling technique. **Results**: The mean pre test knowledge scores were 14.32 ± 3.61, whereas mean post test knowledge score was 23.36 ± 3.24. The post test mean value knowledge score among nursing undergraduates was significantly higher than the pre test knowledge score regarding feeding practices in low birth weight neonates. The paired student "t" test value was 13.4796 which was significant at P=0.001 level. The findings revealed that there was no significant association between knowledge score with demographic variables. **Conclusion**: Study concluded that feeding practices in low birth weight neonates should be given more weight-age for overall growth and to reduce complications among neonates.

Keywords: Feeding practices, LBW neonates, nursing undergraduates, Knowledge, Educational package

Introduction

An infant's birth weight is the initial weight measured after birth; it should ideally be taken in the first few hours of life, before there has been any noticeable postnatal weight reduction. According to the World Health Organization (WHO), low birth weight (LBW) is defined as a birth weight of less than 2500 g (up to and including 2499 g).[1] Low birth weight is a condition that affects 15.5% of the world's population, or 20.6 million newborns annually, 96.5% of whom are born in poor nations. Every year, almost 18 million newborns with birth weights of under 2500g are delivered. While making up only around 14% of all live births, these Low Birth Weight neonates responsible for 60–80% of all neonatal mortality.[2]

Each year, an estimated 20 million babies are born underweight and 15 million babies are born preterm. Low birth weight (LBW) and preterm infants are more prone to have developmental disabilities such cerebral palsy and retinopathy of prematurity. The effects of being premature and having a low birth weight may persist throughout age, increasing the chance of developing chronic diseases that manifest in adulthood like obesity and diabetes.[3]

Nutrition is believed to play a fundamental role in optimizing the growth and development of these neonates both during their period of hospital stay and post discharge. There is need for information on the choice of milk for a preterm, fortification, dilemmas regarding when to initiate feeds, progression and frequency of feeds and lastly management of feed intolerance.[4]

The best possible nutrition for low birth weight newborns is crucial for both their immediate survival and future growth. These newborns have very different feeding capacities and dietary needs from their peers with normal birth weight. In the early postnatal period, they are also vulnerable to developing feed intolerance.[5]

Jagadeesh H et al, (2018) found that majority of subjects 38(76.0%) had average knowledge level, 5(10.0%) had good knowledge and 07(14.0%) had poor knowledge level regarding feeding practices for low birth weight baby admitted in selected hospitals of Karnataka.[6] **Das R et al. (2014)** found that only 28% of the 200 moms they studied really initiated breastfeeding within an hour of giving delivery, despite knowing that it should be done. Only 60% of mothers who knew about exclusive breastfeeding actually did it. Only 2% of infants were breastfed for the first 24 months, whereas 24% of infants had prelacteal feeds.[7] **Kaur (2013)** revealed that NICU staff nurses has low knowledge level regarding care of low birth weight baby in NICU.[8] Poor feeding practices in LBW babies leads to hypoglycaemia, infections, convulsion, aspiration, and other complications. Proper feeding practices in NICUs can be effective in reducing many complications and weight gain in LBW babies. So the investigators took initiative to select the following topic for the study.

Objectives

1. To assess the level of knowledge of nursing undergraduates regarding feeding practices in low birth weight neonates.
2. To prepare and distribute the information booklets regarding feeding practices in low birth weight neonates.
3. To find out the effectiveness of information booklet regarding feeding practices in low birth weight neonates among nursing undergraduates.
4. To find out the association of the pre test knowledge score of nursing undergraduates regarding feeding practices in low birth weight neonates with their selected demographic variables

Hypothesis (at 0.05 significance level)

H_1: There is a significant difference between pre test and post test level of knowledge regarding feeding practices in low birth weight neonates among nursing undergraduates.

H_2: There is a significant association between the pre test level of knowledge regarding feeding practices in low birth weight neonates and selected socio – demographic variables of nursing undergraduates.

Research Methodology

Research approach:-Quantitative approach.

Research Design:-Pre experimental research design (one group pre test and post test design) was used to conduct the study.

Research Setting: Study was conducted at Bhagwan Mahavir School of nursing Surat Gujarat.

Sampling technique and sample: 50 nursing undergraduates selected through non probability purposive sampling technique.

Research Tool: The tools selected for the present study divided in two sections.

Section I:- Socio-demographic variables included 4 items such as age, gender, religion and monthly family income.

Section II:- Structured knowledge questionnaire consists of 30 questions to assess the level of knowledge regarding feeding practices in low birth weight neonates among nursing undergraduates. The area included were knowledge on Introduction and definition of specific terms (included 3 questions), importance of feeding practices in LBW neonates (included 14 questions), and Ryle's tube feeding (included 13 questions).

All subjects received an information sheet outlining the goal and results of the study prior to the administration of the instrument. Participants' informed consent was obtained, and they were given self-explanatory materials. Permission for study was taken from concerned authorities. Period of data collection was from January 2025 to February 2025.

Results

Table: 1. Distribution of samples according to socio demographic variables (N=50)

S. No.	Demographic Variables	Freq.	%
1.	Age (in years)		
a)	20 years & less	27	54%
b)	21-24 years	20	40%
c)	More than 24 years	03	6%
2	Gender		
a)	Male	15	30%
b)	Female	35	70%
3.	Religion		
a)	Hindu	28	56%
b)	Christian	14	28%
c)	Muslim	05	10%
d)	Others	03	6%
4.	Monthly family income		
a)	Less than 10000/- Rs,	01	2%
b)	10001 to 20000/- Rs.	16	32%
c)	20001 to 30000/- Rs.	17	34%
d)	30001 to 40000/- Rs.	11	22%
e)	More than 40000/- Rs.	05	10%

According to **table 1**, 54% nursing undergraduates were in the age group of 20 years and less, 40% were in the age group of above 21-24 years. Regarding gender**,** majority of nursing undergraduates 70% were females. In view of religion**,** 56% nursing undergraduates were Hindus, 28% were Christians, while 10% were Muslims and 6% were from other religions. As per monthly family income**,** 34% nursing undergraduates were in 20001 to 30000/- Rs monthly family income group, 32% were in 10001 to 20000/- Rs group, 22% were in 30001 to 40000/- Rs group.

Table:2- Pre-test and post-test score of knowledge regarding feeding practices in low birth weight neonates (N=60)

Level of knowledge	Pre-test scores		Post test scores	
	Freq.	%	Freq.	%
Inadequate	36	72%	0	0
Moderately adequate	12	24%	21	42%
Adequate	02	4%	29	58%

The data given in **table 2** revealed that, among 50 nursing undergraduates, in pre – test majority of nursing undergraduates 72% had inadequate knowledge level and 24% had moderately adequate knowledge level and 4% had adequate knowledge level regarding feeding practices in low birth weight neonates. While in post test majority 58% of nursing undergraduates had adequate knowledge level and 42% had moderately adequate knowledge level and nobody had inadequate knowledge score regarding feeding practices in low birth weight neonates.

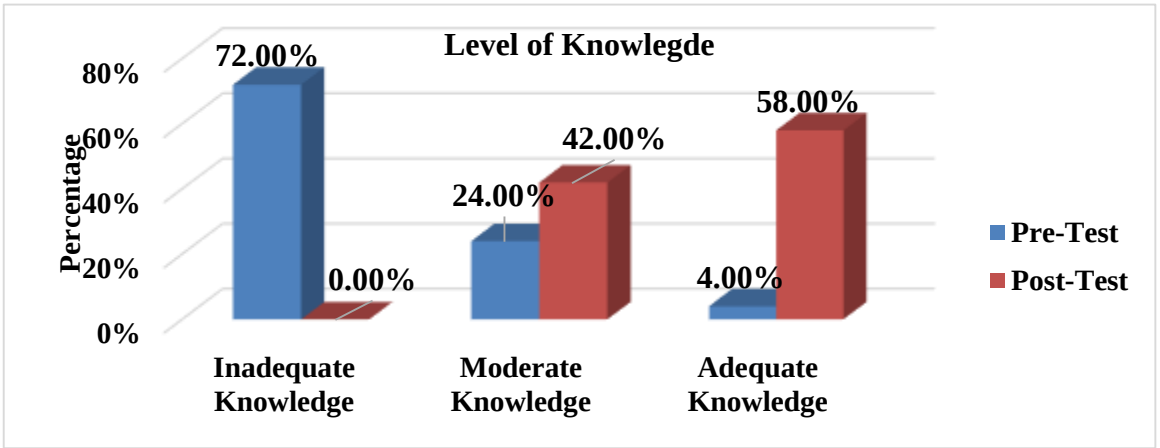

Figure1. Percentage Distribution of Pre-test and Post-Test Level of Knowledge among nursing undergraduates

Table 3 Comparison of mean pre-test and mean post-test score of knowledge among nursing undergraduates regarding feeding practices in low birth weight neonates (N=60)

Sr. No.	Observation	Mean	SD	Mean Difference	Paired 't' value
1	Pre-test	14.32	3.61		
2	Post-test	23.36	3.24	9.04	13.4796

As per **table 3**, The mean pre – test score is 14.32 with standard deviation 3.61 and mean post –test knowledge score is 23.36 with standard deviation 3.24. The mean difference was 9.04.The Paired 't' test value was 13.4796 was greater than table value (1.9842 at df-49) at .05 level of significance. It shows that there is significant difference between the pre test and post test level of knowledge regarding feeding practices in low birth weight neonates among nursing undergraduates. The above finding clearly states that Information Booklet (IB) has significant beneficial effect in the level of knowledge among nursing undergraduates.

Table 4 Association between post test knowledge score and socio-demographic variables of nursing undergraduates

S. No.	Demographic Variables		Level of knowledge		X^2	Table Value	Level of significance
		Freq.	In-adequate	Mod. Adequate + Adequate			
1.	Age (in years)						
a)	20 years & less	27	19	08			
b)	21-24 years	20	16	04	2.89	5.99	NS
c)	More than 24 years	03	01	02			
2	Gender						
a)	Male	15	11	04	0.01	3.84	NS
b)	Female	35	25	10			
3.	Religion						
a)	Hindu	28	20	08			
b)	Christian	14	12	02	3.89	7.82	NS
c)	Muslim	05	02	03			
d)	Others	03	02	01			
4.	Monthly family income						
a)	Less than 10000/- Rs.	01	01	00			
b)	10001 to 20000/- Rs.	16	12	04			
c)	20001 to 30000/- Rs.	17	10	07	4.23	7.82	NS
d)	30001 to 40000/- Rs.	11	10	01			
e)	More than 40000/- Rs.	05	03	02			

Table 4 revealed that there was no significant association found between the pre-test knowledge score regarding feeding practices in low birth weight neonates with demographic variables like age, gender, religion, monthly family income of nursing undergraduates.

Discussion

Our study findings revealed that, among 50 nursing undergraduates, in pre – test majority of nursing undergraduates 72% had inadequate knowledge level and 24% had moderately adequate knowledge level and 4% had adequate knowledge level regarding feeding practices in low birth weight neonates. Our result supported by **Jagadeesh H et al, (2018)[6]**, their study also revealed that majority of subjects 38(76.0%) had average knowledge level, 5(10.0%) had good knowledge and 07(14.0%) had poor knowledge level regarding feeding practices for low birth weight baby admitted in selected hospitals Belagavi. Our result also supported by **Kaur R (2013)[8]** with similar finding which showed that majority of staff nurses had low knowledge level regarding care of low birth weight baby in pre test. **Qureshi UA et al. (2019)9** discovered in their study on health care workers' knowledge of baby and young child feeding that there was insufficient understanding regarding the feeding of babies with low birth weight (25.75%) and breast feeding counselling (6.06%). A contradictory finding revealed by study conducted by **Buloze F (2021)[10]**. Researchers discovered that nurses employed in tertiary referral hospitals demonstrated a commendable degree of competency in baby nutrition, as well as a favourable attitude and, for the majority of them, a relatively high level of practise.

Our study revealed in post-test majority 58% of nursing undergraduates had adequate knowledge level and 42% had moderately adequate knowledge level and nobody had inadequate knowledge score regarding feeding practices in low birth weight neonates. The mean pre – test score is 14.32 with standard deviation 3.61 and mean post –test knowledge score is 23.36 with standard deviation 3.24. The mean difference was 9.04. The Paired 't' test value was 13.4796 was greater than table value (1.68 at df-49) at .05 level of significance. It shows that there is significant difference between the pre test and post test level of knowledge regarding feeding practices in low birth weight neonates among nursing undergraduates. The above finding clearly states that Information Booklet (IB) has significant beneficial effect in the level of knowledge among nursing undergraduates. Our findings supported by **El-Morsy HAS et al (2020)[11]** with similar findings in his study to improve the knowledge level of nurses about the nutritional requirements of low birth weight infants through implementing a guideline protocol on nurses knowledge. Researchers found that after the introduction of the guideline approach, nurses' knowledge of the dietary needs of low birth weight infants significantly improved. Similar results were also found by **Sharma N et al (2020)[12]** in their quasi-experimental study to evaluate the impact of culturally appropriate nutrition educational intervention for health workers to enhance supplemental feeding of infants aged six months to twelve months in Chandigarh.

Aggarwal S (2022)[13], Omidi A et al (2022)[14] and **Phanase BN (2016)[15]** also revealed similar finding while assessing effectiveness of educational intervention regarding feeding practices and care of neonates. Similar findings revealed by **Tak HK, Chaturvedi D (2022)[16]** while evaluating effectiveness of learning package on weaning practices among primipara mothers.

Our study revealed that there was no significant association found between the pre-test knowledge score regarding feeding practices in low birth weight neonates with demographic variables like age, gender, religion, monthly family income of the nursing undergraduates.

Our findings supported by **Gupta P et al (2021)[17]** in their study revealing no significant association found between the pre-test knowledge with demographic variables. While **Aggarwal S (2022)[13]** revealed that age, education and occupation were significantly associated with pre test knowledge level in their study**.**

Conclusion: - Findings of our study strongly recommend the need for conducting education program to increase the knowledge regarding feeding practices in low birth weight neonates among nursing undergraduates. By educating nurses, complications related to low birth weight neonates can be minimized and weight gain can be ideally maintained. It helps to reduce both morbidity and mortality of neonates.

Limitations: Fifty small sample size made it difficult to draw generalization. A structured questionnaire was used for data collection which restricts the amount of information that can be obtained from the respondents, only knowledge was assessed; no attempt was made to assess their attitudes and practice level due to time shortage and less resources.

Source of Funding: Researcher had self-financed the present study.

Conflict of Interest: There was no conflict of interest involved while conducting the present study.

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