



WWJMRD 2023; 10(01): 36-41

www.wwjmr.com

International Journal

Peer Reviewed Journal

Refereed Journal

Indexed Journal

Impact Factor SJIF 2017:

5.182 2018: 5.51, (ISI) 2020-

2021: 1.361

E-ISSN: 2454-6615

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A Study to Assess the Effectiveness of Selected Nursing Measures Among Neonates with Low-Birth-Weight Babies of Government Hospital, Jamnagar. Gujarat State

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Abstract

The prevalence of low birth weight exists universally in all population. Low birth weight with high mortality and morbidity continuous to be a major public health problem in India., Over 30% of the infants are born with low birth weight. Nearly 75% of the neonatal deaths and 50% of infant deaths occur among low birth weight.

Material & Methods: A evaluative research design was adopted, Study setting was Government hospital, Jamnagar, Gujarat state. The sample will select by convenient sampling technique (n=100). Study population were Neonates with low-birth-weight babies. And Study tool: was for demographic variables, ongoing assessment tool and observational checklist.

Analysis: The health status of the newborn with a low birth weight has improved, with 109 out of 125 babies (97.2% of the total) showing moderate deterioration on the first evaluation day and 16 (12.8%) showing severe deterioration. On the last day of examination, 119 (95.2% of the neonates) were in good health and 6 (4.8%) were showing signs of minor health decline. There was an uptick in activity and eating, and the newborns' weight remained stable, all of which pointed to an improvement in their health. Based on these results, it is clear that the nursing care that was given was beneficial.

Conclusion: Newborns born with low birth weights may benefit from this study's evaluation of certain nursing interventions. The findings showed that some nursing interventions significantly improved the physiological health status of newborns with low birth weight and reduced the severe health deterioration that these babies experience.

Keywords: Low-Birth-Weight Babies, Nursing Measures, public health

Introduction

“We need to make a world in which fewer children are born, and in which we take better care of them”. – Max born.

Ensuring Child Health, an investment for the future. Newborns are the heritage of the family and newborns health of the nation. The arrival of human life into this world and its subsequent struggle for independent existence has tested the time of all those who take care of the newborn.

World Health Organization, (2014)

Data published regarding low-birth-weight deaths in India reached 380,890 or 4.29% of total deaths. The adjusted death rate is 27.79 per 100,000 of population ranks India 16 in the world.

Birth weight is the single most important factor determining the survival chances of the newborn. Many of the newborn die during their first year of life. The infant mortality rate is higher for all low-birth-weight babies than other babies. The lower the birth weight, the lower is the survival chance of the newborn.

There were 1.8 million infant deaths in the world in 2006. Most of them occurred in developing countries and approximately one half took place during their neonatal period.

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Low birth weight babies can be managed at the time of antenatal period. Many mothers go on to enjoy near normal life if their babies were properly managed. Early intervention is important, especially for the management of feeding, handling, cleanliness, prevention from the infection. Mother's knowledge about care of baby reflects the health and nutritional status of the baby. Nurses play the significant role in empowering the mother of low birth weight with reliable method to get relieved of their worries and to join hands with the nurses in care of low-birth-weight babies.

Objectives

1. To assess the health condition of neonate with low birth weight.
2. To evaluate the effectiveness of nursing measures of neonate with low birth weight.
3. To associate the findings with the demographic variables of neonate with low birth weight and the effectiveness of nursing measures.

Assumption

1. If a neonate is evaluated daily, the nurse may learn a lot about the baby's health, development, and progress, and she can use that information to tailor treatment to the baby's particular needs.
2. Improvements in neonatal weight may be achieved by well-executed nursing interventions.

Reviews of literature:

The review of literature in this study organized as follows

- A. Literature related to cause of low-birth-weight baby
- B. Literature related to Prevention of low-birth-weight baby
- C. Literature related to management of low-birth-weight baby

The theory components are as follows

- a. Care giver characteristics
- b. Infant characteristics

A) Care Giver Characteristics

One of the most important caretakers is the nurse. The ability to appropriately interpret the signals offered by the newborns is crucial for the caregiver.

1) Sensitivity to cues

Some of the most basic signs of neonatal illness are a low body temperature, slow reflexes, irritability, changes in skin colour, disturbed sleep patterns, and a feeble scream. In order for the caregiver to accomplish their objective of bringing about the anticipated change in the neonate, the signals must be decreased.

Methodology

This section covers the study's methodology, which includes the research design, context, study population, sample size, sampling strategy, data gathering, and tools.

Research Design

Using a descriptive evaluative study strategy, the nursing care of low-birth-weight neonates was examined. The assessment of newborns' requirements and difficulties was followed by the provision of nursing care.

Sample Setting

Guru Gobindsingh Government Hospital in Jamnagar was the site of the research. This hospital has 1350 beds and does 750 births per month. About three or four infants are born each day with a low birth weight in this category.

Variables

Independent variable

The chosen nursing measures serve as the independent variable in this research.

Dependent Variable

Dependent variables of the study were neonates with low birth weight.

Population

All newborns admitted to the neonatal critical care unit at Guru Gobindsingh Government Hospital, Jamnagar, due to low birth weight, made up the study's population.

Sampling Technique

The selection process used a convenient sampling mechanism.

Criteria For Sample Selection

Inclusion Criteria

Babies who are having low birth weight
Infants admitted to Jamnagar's Guru Gobindsingh Government Hospital

Exclusion Criteria

- A. Premature infants
- B. Babies whose birth weight is above 2.5 kg
- C. Babies who are critically ill

Sample Size

One hundred twenty-five babies born with low birth weights made up the sample.

Instrument

Details of the tool used in this study are given below

Section-1: Demographic variables

The demographic characteristics were gathered through the use of a questionnaire.

Section-2: Ongoing assessment tool

The neonates with low birth weight were monitored using a rating scale to assess their health.

Section-3 Observational checklist

Part A- General check list

Part B-Nursing care of Neonates with low birth weight

Data Collection

Guru Gobindsingh Government Hospital in Jamnagar was the site of the research. Using the supplied instruments, the data was gathered over the course of eight weeks. The study's aims informed the development of the tools.

Tool description

In this section, you will find details on the instruments used, the pilot research report, the validity and reliability of the study, the informed consent process, the scoring system, the analytic strategy, and the final findings.

Description of the Study

Details of the tools used in this study are given below.

1. 1.Performa for demographic variable.
2. 2.Ongoing assessment tool
3. 3.Observational check list

Section-1: Performa for demographic variable.

This section includes information on demographic data such as neonates' ages, sexes, birth orders, weights, types of births, parents' educational and occupational backgrounds, family income and type, parents' marital status, and places of birth and health data.

Section-2. Ongoing assessment tool

The neonates with low birth weight were monitored using a rating scale to assess their health. The low-birth-weight neonates are the subject of 10 questions in this section. The highest score for each question was three, the lowest score was one, and there was a total of thirty scores".

Section-3. Observational check list

Part A – General checklist.

Part B - Nursing care of neonates with low birth weight.

This part pertains to the evaluation of the neonate's health status based on their low birth weight using the general assessment scale. Temperature, heart rate, respiration, eating, and anthropometric measurements are the five components that make it up. Breathing, temperature control, nourishment, hydration, immunization, and follow-up care are all aspects of nursing care.

Data collection

. A total of eight weeks were devoted to gathering data. After a quick introduction and rapport-building with the mothers, the investigator collected data from the neonates' mothers based on the results of the initial assessment, which was followed by a series of carefully chosen nursing measures for babies born with low birth weights, and finally, a final evaluation.

The obtained data were interpreted by the following procedure

$$\text{Scoring interpretation} = \frac{\text{Obtained score}}{\text{Total Score}} \times 100$$

Based on the information data were classified as follows

Less than 50% - severe health deterioration

51 to 70 % - mild health deterioration

71 to 100% - normal health condition

Data Analysis and Interpretation

Finding the total score, percentage score, mean, and standard deviation was done using the descriptive statistical

analysis approach. We used the paired t-test and interpreted the results for every single score.

SI. No	Data Analysis	Methods	Remarks
1.	Descriptive analysis	The total number of score, percentage of score, mean and standard deviation	To describe the demographic variables of the neonate with low birth weight and to assess the effectiveness of neonate with low birth weight.
2.	Inferential analysis	Paired 't' test	To compare the health condition of the neonate on first and fifth day.
3.	Inferential analysis	Chi- square test	To analysis the association between demographic variables and nursing care for neonates with low birth weight

Section – A: Demographic distribution of babies born prematurely or with a low birth weight.

Section- B: Frequency and percentage distribution of first assessment score and final evaluation score of babies with low birth weight.

Section – C: Data pertaining to the average and standard deviation of the first and final evaluation scores of low-birth-weight neonates.

Section – D: Neonatals born with low birth weights: improvement score means and standard deviation of both the first and final evaluations, as well as the efficacy of nursing care.

Section – E: Nursing care for infants born with low birth weight and its association with maternal demographic characteristics

S.No.	Demographic variables	frequency	percentage
6.	Education status of the father		
	a. Illiterate	35	28.0
	b. Primary school level	55	44.0
	c. High school level	17	13.6
	d. Graduate	11	8.8
	e. Professionally qualified	7	5.6
7.	Education status of the mother		
	a. Illiterate	34	27.2
	b. Primary school level	61	48.8
	c. High school level	16	12.8
	d. Graduation	8	6.4
	e. Professionally qualified	6	4.8
8.	Occupation of the father		
	a. Govt.job	16	12.8
	b. Private or business	84	67.2
	c. Coolie	21	16.8
	d. Unemployed	4	3.2
9.	Occupation of the mother		
	a. Govt job	0	0
	b. Private or business	23	18.4
	c. Coolie	76	60.8
	d. Unemployed	26	20.8
10.	Type of family		
	a. Nuclear family	29	23.2
	b. Joint family	96	76.8
11.	Family income		
	a. 5000 per month	19	15.2
	b. 5001 – 10000 per month	79	63.2
	c. 10001 – 15000 or more per month	27	21.6
12	Marital status of parents		
	a. Consanguineous marriage	56	44.8
	b. Non consanguineous marriage	69	55.2
13	Health information through		
	a. Media (radio, TV, movie)	81	64.8
	b. Health personnel	34	27.2
	c. Friends & neighbors	10	8.0

Table 4.1 shows that out of 125 neonates, 53 (42.4%) were under 2 days old, 47 (36.7%) were between 2 and 5 days old, and 25 (20%) were 5 days old and beyond. There were 63 males and 62 females, or 50.4% and 49.6%, respectively. There were 42 first-borns (or 33.6% of the total), 48 second-borns (or 38.4% of the total), 26 third-borns (or 20.8% of the total), and 9 fourth-borns (or 7.2% of the total).

Concerning the weight at birth Of the neonates, 21 had a birth weight of 1.2 kg, 14 were 1.5 kg, 16 were 1.6 kg, 14 were 1.7 kg, 08 were 6.4 percent, 17 were 13.6 percent, 9 were 7.2 percent, 2.0 kg, 18 were 14.4 percent, and 08 were 2.2 kg. There were 101 babies delivered naturally (80.8 percent), and 24 babies born by caesarean section (19.2 percent).

Considering education status of father 35(28.0%) Illiterate,55(44%) primary school level,17(13.6%)high school level,11(8.8) graduate,7(5.6%) professionally

qualified and Considering education status of Mother 34(27.2%) Illiterate,61(48.8%) primary school level,16(12.8%)high school level,8(6.4%) graduate,6(4.8%) professionally qualified.

Considering the occupation of the father were 16(12.8%) Govt job,84(67.2%) private or business, 21 (16.8%) were coolie. 3(3.2%) of the father were unemployed. occupation of the mother were 0(0%)Govt job,23(18.4%) private or business, 70 (60.8%) were coolie. 26(20.8%) of the were unemployed.

29 (23.2%) belonged to nuclear family,96 (76.8%) were joint family. nineteen (63.3%) were consanguineous marriage, 56 (44.8%) were non consanguineous marriage. 69 (55.2%) .

In terms of health-related information, 81 (64.8%) received it via various forms of media (radio, TV, movies), 34 (27.2%) from medical professionals, and 10 (8.0%) from personal connections.

Table 4.2
frequency and percentage distribution of assessment and evaluation score of
neonate with low birth weight n=125

Health status	Initial Assessment		Final Evaluation	
	N	%	N	%
Normal health condition	-	-	119	95.2
Mild health deterioration	109	87.2	06	04.8
Severe health deterioration	16	12.8	-	-

When looking at the health status of the low-birth-weight newborn, Table 4.2 shows that out of 125 neonates, 109 (87.3%) were in a moderate state of deterioration and 16 (12.8%) were in a severe state on the first day of

evaluation. While 119 (95.2% of the total) were in good health, 6 (4.8%) were showing signs of moderate decline. Looking at the newborns' health from the first assessment day to the last evaluation day reveals an improvement.

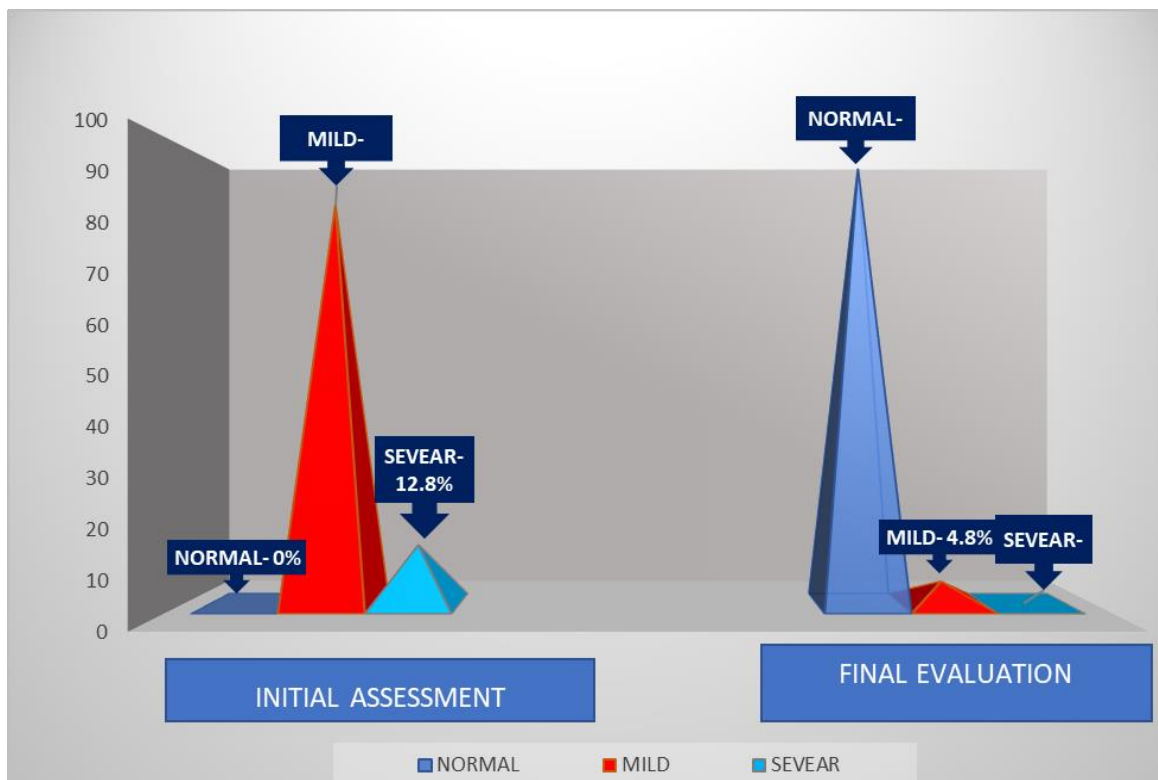


Fig. 4.1: Frequency and percentage distribution of assessment and evaluation score for neonate with Low Birth Weight.

Mean, standard deviation and t test of initial assessment and final

evaluation scores of neonates with low-birth-weight n=125

	Mean	Std. Deviation	t -test	P-Valuation	Result
Initial Assessment	1.64	0.32	4.84	P<0.05	Significant
Final Evaluation	1.85	0.38			

We can see the average, standard deviation, and t-test results for the first and last evaluations in Table 4.3. The average birth weight of 125 infants the mean score at the beginning of the evaluation period was 1.64 (standard deviation 0.32), and at the end of the evaluation period it had increased to 1.85 (standard deviation 0.38). On the last day of testing, the average was higher. The T-test result is 4.84 and the p-value is less than 0.05. The health of neonates born with low birth weight improved significantly. The efficacy of nursing care for neonates with low birth weight is associated with maternal demographic characteristics, as shown in Table 4.4. This indicates that there is no statistically significant correlation between the following demographic variables: the baby's age, gender, the neonate's birth order, the type of birth, the parents' educational and occupational backgrounds, the family type, the parents' marital status, and health records. Nursing care is significantly associated with birth weight. The moms were undernourished during the antenatal period due to a lack of knowledge about prenatal nutrition. The newborn's birth weight drops as a result of this.

The correlation between maternal income and infant weight is statistically significant.

Low birth weights are a direct result of mothers and infants becoming hungry due to low incomes.

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