

A Study to Assess the Effectiveness of a Structured Teaching Programme on Knowledge Regarding Neonatal Jaundice among Postnatal Mothers Admitted to Civil Hospital, Surat

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Abstract

Background: Neonatal jaundice is one of the most frequently encountered clinical conditions during the neonatal period, affecting nearly 60% of term newborns and approximately 80% of preterm newborns within the first week of life. Although physiological jaundice is generally benign and self-limiting, delayed recognition and inappropriate management may lead to severe hyperbilirubinemia, bilirubin encephalopathy, and kernicterus, resulting in permanent neurological damage or death. Since mothers are the primary caregivers after discharge, their knowledge regarding the identification of danger signs, breastfeeding practices, follow-up care, and timely healthcare seeking is essential for preventing complications. Structured educational interventions have emerged as an effective strategy for improving maternal awareness and promoting early detection.

Objectives: To assess the effectiveness of a structured teaching programme on knowledge regarding neonatal jaundice among postnatal mothers admitted to Civil Hospital, Surat.

Methods: A quantitative pre-experimental one-group pre-test and post-test research design is proposed. Postnatal mothers admitted to the postnatal ward of Civil Hospital, Surat, will be selected using convenient sampling. Knowledge will be assessed using a structured questionnaire before and after implementation of a structured teaching programme. Descriptive and inferential statistics will be used to evaluate changes in knowledge scores and determine statistical significance.

Expected Results: The structured teaching programme is expected to significantly improve the knowledge of postnatal mothers regarding causes, clinical manifestations, danger signs, prevention, treatment, and home care of neonatal jaundice. It is anticipated that post-test knowledge scores will be significantly higher than pre-test scores.

Conclusion: Maternal education plays a crucial role in promoting neonatal health. Structured teaching programmes may serve as an effective educational intervention to improve maternal knowledge and facilitate early recognition and management of neonatal jaundice, thereby reducing neonatal morbidity and mortality.

Keywords: Neonatal jaundice, Structured teaching programme, Postnatal mothers, Maternal knowledge, Health education, Neonatal care.

Introduction

The neonatal period, comprising the first 28 days of life, is a critical stage characterized by rapid physiological adaptation from intrauterine to extrauterine life. During this period, newborns are particularly vulnerable to a variety of health problems that require timely recognition and appropriate management. Among these conditions, neonatal jaundice remains one of the most common clinical findings encountered in neonatal practice worldwide.

Neonatal jaundice is characterized by yellow discoloration of the skin, sclera, and mucous membranes resulting from elevated serum bilirubin levels. The condition occurs due to the immature hepatic conjugation system, increased destruction of fetal red blood cells, and delayed bilirubin excretion. While physiological jaundice generally resolves without complications, pathological jaundice requires prompt diagnosis and treatment to prevent severe neurological consequences.

Globally, neonatal jaundice affects millions of newborns each year. Studies indicate that approximately 60% of full-term infants and 80% of preterm infants develop visible jaundice during the first week of life. Although many cases resolve spontaneously, delayed diagnosis remains a significant public health concern, particularly in low- and middle-income countries where awareness among caregivers may be limited.

In India, neonatal jaundice contributes substantially to neonatal hospital admissions. Limited maternal knowledge regarding recognition of danger signs, delayed initiation of breastfeeding, use of traditional remedies, and inadequate follow-up often contribute to preventable complications. Consequently, educating postnatal mothers has become an essential component of neonatal healthcare services.

Health education empowers mothers with knowledge regarding the causes, signs and symptoms, risk factors, complications, treatment modalities, and preventive measures associated with neonatal jaundice. Structured teaching programmes provide systematic and evidence-based information that enhances learning, improves retention of knowledge, and encourages positive health-seeking behavior.

Nurses play a pivotal role in educating mothers during the postnatal period. Through counselling, demonstrations, educational materials, and reinforcement, nurses help mothers recognize early warning signs and understand the importance of exclusive breastfeeding, timely medical consultation, and adherence to follow-up recommendations.

Considering the high prevalence of neonatal jaundice and the vital role of maternal knowledge in preventing complications, evaluating the effectiveness of structured teaching programmes is of considerable importance. The findings of such studies can contribute to improved nursing practice, enhanced maternal education, and better neonatal health outcomes.

Need for the Study

Neonatal jaundice is one of the most prevalent neonatal conditions worldwide and remains a significant contributor to neonatal morbidity, particularly in developing countries. Although physiological jaundice is usually self-limiting, delayed diagnosis and inadequate management may result in severe hyperbilirubinemia, bilirubin-induced neurological dysfunction (BIND), acute bilirubin encephalopathy, and kernicterus. These complications can lead to irreversible neurological impairment, hearing loss, cerebral palsy, developmental delay, and even neonatal death.

According to global estimates, approximately 60% of term neonates and 80% of preterm neonates develop jaundice during the first week of life. Most cases are physiological; however, 8–10% require medical intervention such as phototherapy or exchange transfusion. In low- and middle-income countries, delayed

recognition and poor awareness among caregivers remain major barriers to timely treatment.

In India, neonatal jaundice is among the leading causes of neonatal hospital admissions. Studies have shown that many mothers are unable to recognize early signs of jaundice, danger symptoms, or the need for immediate medical consultation. Cultural misconceptions, home remedies, and delayed health-seeking behavior further increase the risk of complications.

Postnatal mothers are the primary caregivers responsible for observing newborn health after hospital discharge. Their knowledge regarding exclusive breastfeeding, early detection of jaundice, danger signs, treatment options, and follow-up care is essential to reduce neonatal complications.

Structured teaching programmes are cost-effective educational interventions that improve maternal knowledge, confidence, and health practices. Nursing professionals play an essential role in delivering these educational programmes during the postnatal period. Therefore, evaluating the effectiveness of structured teaching programmes is important to strengthen nursing practice and improve neonatal health outcomes.

Statement of the Problem

A Study to Assess the Effectiveness of a Structured Teaching Programme on Knowledge Regarding Neonatal Jaundice Among Postnatal Mothers Admitted to Civil Hospital, Surat.

Objectives of the Study

Primary Objective

- To assess the effectiveness of a structured teaching programme on knowledge regarding neonatal jaundice among postnatal mothers.

Specific Objectives

1. To assess the pre-test level of knowledge regarding neonatal jaundice among postnatal mothers.
2. To evaluate the effectiveness of the structured teaching programme by comparing pre-test and post-test knowledge scores.
3. To determine the association between pre-test knowledge scores and selected demographic variables such as age, education, occupation, parity, family income, religion, and previous knowledge.

Research Hypotheses

H₁: There will be a statistically significant difference between the mean pre-test and post-test knowledge scores of postnatal mothers regarding neonatal jaundice after administration of the structured teaching programme.

H₂: There will be a significant association between pre-test knowledge scores and selected demographic variables.

Null Hypotheses

H₀₁: There is no significant difference between pre-test and post-test knowledge scores.

H₀₂: There is no significant association between knowledge scores and selected demographic variables.

Operational Definitions

Effectiveness

Refers to the extent to which the structured teaching programme improves the knowledge of postnatal mothers regarding neonatal jaundice, measured by the difference between pre-test and post-test knowledge

scores.

Structured Teaching Programme

A systematically planned educational session prepared by the investigator regarding neonatal jaundice, including causes, risk factors, signs and symptoms, diagnosis, treatment, prevention, home care, and danger signs.

Knowledge

The level of understanding possessed by postnatal mothers regarding neonatal jaundice, assessed through a structured knowledge questionnaire.

Neonatal Jaundice

Yellow discoloration of the skin and sclera occurring during the neonatal period due to elevated serum bilirubin levels.

Postnatal Mothers

Mothers admitted to the postnatal ward after delivery at Civil Hospital, Surat, during the period of data collection.

Research Methodology

Research methodology is a systematic approach used to conduct scientific research. It provides a structured framework for collecting, analyzing, and interpreting data to answer the research question. This chapter describes the research approach, research design, variables, setting, population, sampling technique, data collection tools, ethical considerations, and statistical methods adopted for the study.

Research Approach

A **quantitative evaluative research approach** is proposed for this study. This approach is appropriate because it allows objective measurement of the effectiveness of a structured teaching programme by comparing pre-test and post-test knowledge scores among postnatal mothers.

Research Design

A **pre-experimental one-group pre-test and post-test research design** is proposed.

Diagrammatic Representation

Pre-test (O_1) → Structured Teaching Programme (X) → Post-test (O_2)

Where:

- O_1 = Assessment of pre-test knowledge
- X = Administration of the Structured Teaching Programme
- O_2 = Assessment of post-test knowledge

The effectiveness of the teaching programme will be determined by comparing the pre-test and post-test scores.

Variables of the Study**Independent Variable**

Structured Teaching Programme on Neonatal Jaundice.

Dependent Variable

Knowledge regarding neonatal jaundice among postnatal mothers.

Demographic Variables

- Age
- Religion
- Educational status
- Occupation
- Family income
- Type of family
- Residence (Urban/Rural)
- Parity
- Previous source of information regarding neonatal jaundice

Setting of the Study

The study is proposed to be conducted in the **postnatal ward of Civil Hospital, Surat, Gujarat**, a tertiary care teaching hospital that provides comprehensive maternal and neonatal healthcare services. The hospital receives a large number of postnatal admissions, making it suitable for conducting the study.

Population**Target Population**

All postnatal mothers.

Accessible Population

Postnatal mothers admitted to the postnatal ward of Civil Hospital, Surat, during the period of data collection.

Sample

The sample consists of postnatal mothers fulfilling the inclusion criteria and willing to participate in the study.

Sample Size

A sample size of **60 postnatal mothers** is proposed.

Sampling Technique

Non-probability convenient sampling technique will be used to select the participants.

This technique is appropriate because participants will be recruited based on their availability and willingness to participate.

Inclusion Criteria

The study will include postnatal mothers who:

- Are admitted to Civil Hospital, Surat.
- Can read or understand Gujarati, Hindi, or English.
- Are willing to participate.
- Provide informed consent.

Exclusion Criteria

The study will exclude mothers who:

- Are critically ill.
- Have severe postpartum complications.
- Have previously attended a structured educational programme on neonatal jaundice.
- Decline participation.

Description of the Research Tool

The research instrument will consist of two sections.

Section A: Demographic Variables

This section includes:

- Age
- Religion
- Education
- Occupation
- Monthly family income
- Residence
- Type of family
- Parity
- Previous knowledge regarding neonatal jaundice

Section B: Structured Knowledge Questionnaire

The questionnaire will contain **30 multiple-choice questions** related to:

- Definition of neonatal jaundice
- Causes
- Risk factors
- Clinical manifestations
- Diagnosis
- Investigations
- Treatment
- Phototherapy
- Breastfeeding
- Prevention
- Home care
- Danger signs
- Follow-up care

Each correct answer will receive **one mark**, while incorrect answers will receive **zero marks**.

Maximum Score = 30

Interpretation of Knowledge Scores

Score	Percentage	Interpretation
0–10	<35%	Poor Knowledge
11–20	36–70%	Average Knowledge
21–30	>70%	Good Knowledge

RESULTS

Section A: Distribution of Postnatal Mothers According to Demographic Variables

Table 4.1 Distribution of participants according to age (n = 60)

Age (Years)	Frequency (f)	Percentage (%)
18–22	18	30.0
23–27	24	40.0
28–32	12	20.0
Above 32	6	10.0
Total	60	100

Interpretation: The table shows that, in this illustrative dataset, **24 (40%)** postnatal mothers were between **23 and 27 years**, followed by **18 (30%)** in the **18–22 years** age group, **12 (20%)** in the **28–32 years** group, and **6 (10%)** were above **32 years**. This indicates that the majority of participants were young adult mothers.

Section B

Pre-test Knowledge

Table 4.2 Distribution of pre-test knowledge scores

Knowledge Level	Frequency	Percentage (%)
Poor	34	56.7
Average	20	33.3
Good	6	10.0
Total	60	100

Interpretation: Before the structured teaching programme, **34 (56.7%)** mothers had **poor knowledge**, **20 (33.3%)** had **average knowledge**, and only **6 (10%)** demonstrated **good knowledge** regarding neonatal jaundice. This suggests a need for educational intervention.

Section C

Post-test Knowledge

Table 4.3 Distribution of post-test knowledge scores

Knowledge Level	Frequency	Percentage (%)
Poor	3	5.0
Average	17	28.3
Good	40	66.7
Total	60	100

Interpretation: Following the structured teaching programme, **40 (66.7%)** mothers demonstrated **good knowledge**, **17 (28.3%)** had **average knowledge**, and only **3 (5%)** remained in the **poor knowledge** category. These illustrative findings show a marked improvement after the educational intervention.

Section D

Comparison of Pre-test and Post-test Mean Scores

Table 4.4 Comparison of knowledge scores (illustrative)

Test	Mean	Standard Deviation	Mean Difference	Paired <i>t</i> value	<i>p</i> value
Pre-test	12.40	3.10			
Post-test	24.80	2.70	12.40	18.56	<0.001

Interpretation

The illustrative mean pre-test score was **12.40 ± 3.10**, whereas the illustrative mean post-test score was **24.80 ± 2.70**. The paired *t*-test showed a statistically significant improvement (**p < 0.001**) in this example dataset, suggesting that the structured teaching programme was associated with increased knowledge.

Section E

Association Between Knowledge and Demographic Variables (Illustrative)

Table 4.5 Association between pre-test knowledge and selected demographic variables

Variable	χ^2 value	<i>p</i> value	Interpretation
Age	8.32	0.040	Significant
Education	12.54	0.010	Significant
Occupation	2.18	0.530	Not Significant
Family Income	6.21	0.180	Not Significant
Parity	9.87	0.020	Significant

Interpretation

In this **illustrative example**, pre-test knowledge was significantly associated with **age**, **education**, and **parity**, while no significant association was observed with **occupation** or **family income**.

Discussion (Example)

The illustrative findings suggest that the structured teaching programme may improve postnatal mothers' knowledge regarding neonatal jaundice. The increase in average knowledge scores after the intervention

is consistent with previous nursing education studies that have reported improved awareness following structured health education. Maternal education can contribute to earlier recognition of jaundice, timely healthcare seeking, and better neonatal outcomes. Future studies with real participant data and larger sample sizes are needed to confirm these findings.

Conclusion

This proposed study demonstrates how a structured teaching programme can be evaluated to improve maternal knowledge regarding neonatal jaundice. Nurse-led educational interventions have the potential to strengthen maternal awareness and support safer newborn care. The illustrative results highlight the type of analyses that can be performed once actual data are collected.

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