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EFFECTS OF KNOWLEDGE PACKAGE ON MANAGEMENT OF NEONATAL JAUNDICE AMONG MOTHERS OF NEONATES ADMITTED IN NEONATAL INTENSIVE CARE UNIT

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Key word: Neonatal jaundice, Demographic Variable, planned teaching programme.

ABSTRACT

Background of study: - Neonatal jaundice is ridiculous but worrying as well, child is very close to mother in his early childhood hence knowledge of mother regarding neonatal jaundice like vellow coloration of skin, eyes, nails and prevention from neonatal jaundice. Prevention neonatal jaundice is all about little more awareness in child handling and child care. Every mother is concern about her child than also jaundice occurs so the aim of study is to minimize such neonatal jaundice by educating the mothers. Problem statement: -Effects of knowledge package on management of neonatal jaundice among mothers of neonate admitted to neonatal intensive care unit in Bhagyoday Tirth hospital Sagar. Objectives of the study: - (1) To assess the pre-test knowledge of mother regarding neonatal jaundice in neonates. (2) To assess the effectiveness of planned teaching programme on knowledge of mothers regarding neonatal jaundice. (3) To find the association between pre test knowledge score of mothers with selected demographic variables. Methods: - Pre experimental one group pre testpost test design. A qualitative preexperimental research approach was used to find out the effectiveness of PTP on prevention of neonatal jaundice among the mothers. The sample consists of 60 mothers of neonates admitted in NICU. They were chosen by convenient sampling technique. The study was conducted at Bhagyoday Tirth Hospital Sagar Madhya Pradesh. The data was collected prior and after the planned teaching programme conducted post test. Results and discussion: - The data was analyzed by descriptive and inferential statistics. The knowledge gained through planned teaching programme was good as it was evidence with a highly significant difference (t=19.18, P<0.001 two tailed) between the mean post-test (X2=17.32) and pre-test (X1=10.28) knowledge score. There was a significant association between the pre-test knowledge score and all the taken variable like age, education, income, occupation of mothers and gestational age of neonate.

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INTRODUCTION

Jaundice is the most common reason for doing blood tests and starting therapy in newborn infants. In some neonates serum bilirubin levels may become excessively high, and in rare instances this may lead to brain damage (*kernicterus*). In such cases it is important to start treatment quickly. Here in discussed various approaches through which serum bilirubin levels may be



reduced, thus potentially preventing brain damage. These include hematomas and other occult hemorrhage, ABOand Rhesus incompatibility, and increased enterohepatic circulation of bilirubin. In addition, genetic conditions such as galactosemia, hemolytic anemias, and Gilbert and Crigler-Najjar syndromes can significantly increase jaundice in newborn infants. [1]

Each year in India over one million newborns die before they complete their first month of life, accounting for 30% of the world's neonatal deaths due to the neonatal jaundice. India's current neonatal mortality rate of 44 per 1000 live births represents 1.2 million children who die each year. Neonatal mortality is higher in rural areas at 49 per 1000 live births (vs. 27/1000 in urban areas). The neonatal mortality rate also varies considerably among Indian states. Orissa and Madhya Pradesh have the highest neonatal mortality rates of 61 (rural 63, urban 42) and 59 (rural 63, urban 40) per 1000 live births, respectively in neonatal jaundice. In Uttar Pradesh the rate is 53/1000 (rural 56, urban 39), and 31/1000 (rural 33, urban 21) in West Bengal. [2].

Types of Jaundice

Physiologic jaundice Mostneonates develop visible jaundice due to elevation of unconjugated bilirubin concentration during their first week. This common condition is called physiological jaundice. This pattern of hyperbilirubinemia has been classified into two functionally distinct periods.

Pathological jaundice (syn. Unconjugated pathological hyperbilirubinemia) Clinical jaundice appearing in the first 24 hours. Increases in the level of total bilirubin by more than 8.5 umol/l (0.5mg/dL) per hour or (85 umol/l) 5 mg/dL per 24 hours.

Breast feeding jaundice "Breastfeeding jaundice" or "lack of breastfeeding jaundice," is caused by insufficient breast milk intake, resulting in inadequate quantities of bowel movements to remove bilirubin from the body. [3]

The symptoms of jaundice are extreme weakness, headache, and fever, loss of appetite, severe constipation, nausea, and yellow discoloration of the eyes, tongue, skin, and urine. Some more clinical feature is following on which we have to concern carefully-

- Refuses breastfeeding or bottle feeding, or is sleepy all the time:
- Has lost a significant amount of weight
- If the baby is extremely jaundiced then baby's arms and legs are yellow.
- Baby sleeps for a longer time than usual.
- The urine color is dark, while the stool appears normal.
- High levels of bilirubin can cause high-pitched crying, Apnea (temporary stoppage of breathing),

listlessness, Seizures and arched backs in the neonatess.

Extremely high levels of bilirubin (Hyperbilirubinemia) lead to Kernicterus, a condition where the brain is severely damaged. [4]

PROBLEM STATEMENT

"Effects of knowledge package on management of neonatal jaundice among mothers of neonates admitted at neonatal intensive care unit in BhagyodayTirth hospital Sagar"

OBJECTIVES OF STUDY

- To assess the pretest knowledge regarding neonatal jaundice among the mothers of neonates.
- To assess the effectiveness of planned teaching programme on knowledge regarding neonatal jaundice.
- To assess the association between pretest knowledge with demographic variable.

HYPOTHESIS

RH1 The mean post test knowledge scores of the mothers regarding neonatal jaundice significantly higher than mean pretest knowledge.

RH2 There will be significant association between pretest knowledge score with the selected demographic variable.

MATERIALS AND METHODS

In the present study quantitative research approach and pre experimental one group pre testpost test design was used. The study was conducted in BhagyodayTirth Charitable Hospital. The sample consist 60 mothers of neonates admitted in neonatal intensive care unit selected by convenient sampling technique. The data was collected prior and after the planned teaching programme conducted post test. The data was analyzed using descriptive and inferential statistics.

DESCRIPTION OF TOOL

To conduct these study two tools were prepared **Part I**: Demographic Performa with11 items:

Part II: Structured questionnaire for assessing the knowledge of mothers regarding the prevention of neonatal jaundice.

Total item was 25, with 25 total score. Arbitrary classification on knowledge score was done as good, average and poor.

PROCEDURE FOR DATA COLLECTION

In order to conduct the research study in the Hospital a written permission was obtained from the medical superintendent of the institute. The data





collection period extended from 20/01/2018 to 10/03/208. The date, time and place were confirmed after discussing with the nursing superintendent. Investigator decided to take 5-10 mothers as sample per day for pre test, treatment and post test. Each day data were collected in the scheduled plan, staff nurse helped in convincing the uneducated mother for participating in study.

Before the pre test the purpose of the study was explained and the confidentiality of the subjects was assured. Consent was obtained from mothers of toddlers regarding participation in the study. PTP was conducted after the pre test. In the same way the second session was started in which investigator conducted post test on the same day. This way data were collected for ten days till February 10, 2011.

All respondents co-operated well with the investigator during data collection period. Mothers appreciated the teaching aids. Technique of teaching they found easy and smooth, the data collection process was terminated after thanking the respondents for their cooperation and patience. The data collected and compiled for data analysis.

ANALYSIS AND INTERPRETATION

Demographic data was planned to analyze in terms of frequency and percentage. The knowledge scores of the mothers before and after planned teaching programs was planned to analyze in terms of frequency, percentage, mean, median, standard deviation and in the form of pie and bar diagrams and Graphs. Chi-square test was planned to find out the association between the knowledge scores and the demographic data. The significant difference between the mean pre test and post test knowledge scores was planned to determine by the paired't' test.

RESULTS

The data was analyzed by descriptive and inferential statistics. The knowledge gained through planned teaching programme was good as it was evidence with a highly significant difference (t=19.18, P<0.001 two tailed) between the mean post-test (X_2 =17.32) and pre-test (X_1 =10.28) knowledge score. There was a significant association between the pre-test knowledge score and all the taken variable like age, education, income, occupation of mothers and gestational age of neonate.

Mean and standard deviation of pre and post test scores is shown in table. Average knowledge gained in pre-test score revealed by mean pre-test score was 10.28 \pm 2.829 while gain in knowledge after introducing planned teaching program post-test mean score was 17.32 \pm 2.190 and slandered deviation is 0.367 . t value is 19.18 and level of significance is less than 0.05.

The probability value of Chi-Square for association of age with pre-test scores is 19.87 for 6 degrees of freedom which shows a highly significant value (p<0.003, two-tailed). while in case of religion the value for Chi-Square test is 6.20 for 6 d. f. which is an insignificant value (p>0.05 two-tailed) reflected that there isn't any significant association between religion with pre-test scores. The values of Chi-Square for income and educational status are 13.37 and 14.17 for 6 degrees of freedom which are significant (p<0.05 two-tailed) values respectively. Therefore it is confirmed that income and educational status statuses of studied subjects are influenced with present problem. Value of Chi-Square for association of occupation of mother with pre-test scores is 15.14 at 4 degrees of freedom which revealed a significant value (p<0.03 two-tailed). The information about delivery and age of neonatesdidn't reflected a significant association with a p-value 3.75 for 4 degrees of freedom (p>0.05 two-tailed) and 11.20 for 6 degrees of freedom (p>0.05 two-tailed) respectively. The probability values of Chi-Square for gestation age is 14.53 for 6 degrees of freedom which is a significant (p>0.05 twotailed) value. The probability value of Chi-square test for associations of weight of neonates, sex of the new born baby (neonates) and days of hospitalization are 12.01 for 8 degrees of freedom, 2.30 for 2 degrees of freedom and 10.56 for 6 degrees of freedom respectively revealed all insignificant (p>0.05 two-tailed) values.

DISCUSSION

In the present study quantitative research approach and pre experimental one group pre test post test design was used. The study was conducted in Bhagyoday Tirth Charitable Hospital. The study finding is stated that the mothers of neonates had more level of knowledge regarding management of neonatal jaundice after structured teaching programme when compared with pre test level of knowledge. Hence the hypothesis was rejected which was stated that there was not significantly associate with the level of knowledge and structured teaching programme regarding management of neonatal jaundice among mothers of neonates. So, structured teaching program is an effective method to increase the knowledge level of mothers regarding management of neonatal jaundice.

| Demographic Variable | Popul | ation | Fı | requency | | | Demographic Variable (Criteria) |
|------------------------------|-------------|-----------|-------|-------------------|-----|------|---------------------------------|
| (Criteria) | Partic | ulars | | | | • | |
| (N=60) | Frequency | | | (N=60) | No. | % | |
| Percentage % | | | | Percentage | | | X2=1.976 |
| | | | | % | | | d.f=4 |
| Age Of Mothers | | | | Age Of | 32 | 32.0 | $\mathbf{p} = 0.740$ |
| | . 10 | 2 | 2.2 | Mothers | 22 | 22.0 | N.5 |
| (in Years) | < 18 | 2 | 3.3 | (in Years) | 33 | 33.0 | |
| | 18-22 | 16 | 26.7 | | 1/ | 17.0 | NO 10 404 |
| | 23-26 | 34 | 56.7 | | (2) | (2.0 | $X_{2}=12.404$ |
| | 27-30 | 8 | 13.3 | | 63 | 63.0 | d. I=4 |
| | >30 | 0 | 0.0 | | 14 | 14.0 | p = 0.015 |
| | IOTAL | 60 | 100.0 | D 1: : | 5 | 5.0 | 5. No. 17.459 |
| Religion of family | | | | family | | | X2=17.458 d.f=6 |
| | Hindu | 55 | 91.7 | | 6 | 6.0 | p = 0.006 |
| | Muslim | 2 | 3.3 | | 32 | 32.0 | S** |
| | Christian | 1 | 1.7 | | 38 | 38.0 | |
| | Sikh | 2 | 3.3 | | 6 | 6.0 | |
| | TOTAL | 60 | 100.0 | | | | X2=13.704 |
| | | | | | 5 | 5.0 | d.f=6 |
| Income of family per month | | | | Income of | 35 | 35.0 | p = 0.033 |
| | | | | family per | | | S* |
| | | | | month | | | |
| (in Rs.) | < 3000/- | 2 | 3.3 | (in Rs.) | 32 | 32.0 | |
| | 3001/- to | 7 | 11.7 | | 10 | 10.0 | |
| | 4000/- | | | | | | |
| | 4001/- to | 18 | 30.0 | | | | X2=19.090 |
| | 5000/- | | | | | | d.f=2 |
| | > 5000/- | 33 | 55.0 | | 36 | 36.0 | $\mathbf{p} = 0.0001$ |
| | TOTAL | 60 | 100.0 | | 46 | 46.0 | <u>S***</u> |
| Educational status of Parent | Illiterate | 1 | 1.7 | Educational | | | X2=66.058 |
| | | | | status of | | | d.f=4 |
| | D' | 7 | 117 | Parent | 4 | 1.0 | p = 0.0001 |
| | level | / | 11./ | | 4 | 4.0 | D *** |
| | High | 30 | 50.0 | | 24 | 24.0 | |
| | school and | | | | | | |
| | above | | | | | | |
| | Graduate | 22 | 36.7 | | 54 | 54.0 | |
| | and above | | | | | | |
| | | | | | | • | TOTAL |
| Demographic Variable | Population | Frequency | | Demographic | 10 | 10.0 | |
| (Criteria) | Particulars | | | Variable | | | |
| | | | | (Criteria) | | | |
| (N=60) | Frequency | | | (N=60) | 61 | 61.0 | |
| Percentage % | | | | Percentage % | 10 | 10.0 | |
| Age Of Mothers | | | | Age Of Mothers | 1 | 1.0 | |
| | 1 | | | | 1 | 1 | 1 |

 Table 1. Frequency Distribution of Demographic Variable



| Demographic Variable (Criteria) | Population Particulars | Frequency | Frequency |
|---------------------------------|------------------------|-----------|--------------|
| | | (N=60) | Percentage % |
| Age Of Mothers | < 18 | 2 | 3.3 |
| (in Years) | 18-22 | 16 | 26.7 |
| | 23-26 | 34 | 56.7 |
| | 27-30 | 8 | 13.3 |
| | >30 | 0 | 0.0 |
| | TOTAL | 60 | 100.0 |
| Religion of family | Hindu | 55 | 91.7 |
| | Muslim | 2 | 3.3 |
| | Christian | 1 | 1.7 |
| | Sikh | 2 | 3.3 |
| | TOTAL | 60 | 100.0 |
| | | | |
| Income of family per month | < 3000/- | 2 | 3.3 |
| (in Rs.) | 3001/- to 4000/- | 7 | 11.7 |
| | 4001/- to 5000/- | 18 | 30.0 |
| | > 5000/- | 33 | 55.0 |
| | TOTAL | 60 | 100.0 |
| Educational status of Parent | Illiterate | 1 | 1.7 |
| | Primary level | 7 | 11.7 |
| | High school and above | 30 | 50.0 |
| | Graduate and above | 22 | 36.7 |
| | TOTAL | 60 | 100.0 |

| | < 1000 | 1 | 1.7 |
|-------------------------------------|-----------|----|-------|
| Weight of Neonates (in grams) | 1000-1500 | 13 | 21.7 |
| | 1501-2000 | 4 | 6.7 |
| | 2001-2500 | 31 | 51.7 |
| | > 2500 | 11 | 18.3 |
| | TOTAL | 60 | 100.0 |
| | Male | 41 | 68.3 |
| Sex of the new born baby (Neonates) | Female | 19 | 31.7 |
| | TOTAL | 60 | 100.0 |
| | 1-7 | 44 | 73.3 |
| | 8-14 | 14 | 23.3 |
| Days of hospitalization | 15-21 | 1 | 1.7 |
| - | 22-28 | 1 | 1.7 |
| | TOTAL | 60 | 100.0 |

Table.2. Comparison of Knowledge Scores between Pre-test and Post-test

| Knowledge | Mean (\overline{X}) | Std. Error of Mean | D. F. | t-value | Level of Significance |
|-----------|-----------------------|-----------------------|-------|---------|-----------------------|
| Pre-test | 10.28 | 0.367 | 59 | 19.18 | 0.001 8 |
| Post-test | 17.32 | | • • | | 0.001 |



Table 3.Demographic Variable

| Demographic Variable (Criteria) | Densis dan Dendaria | Pre-test Score | | | T () | | |
|---|-------------------------------|----------------|----------------|-----------------|--------|--|--|
| Demographic Variable (Criteria) | Population Particulars | Poor (0-8) | Average (9-16) | Good (17-25) | 1 Ota1 | | |
| | < 18 | 1 | 0 | 1 | 2 | | |
| Annether | 18-22 | 7 | 8 | 1 | 16 | | |
| Age of momen | 23-26 | 9 | 25 | 0 | 34 | | |
| (III Tears) | 27-30 | 1 | 7 | 0 | 8 | | |
| | Total | 18 | 40 | 2 | 60 | | |
| A | $r_6^2 = 19.87$ p<0.003 | | | | | | |
| | Hindu | 16 | 37 | 2 | 55 | | |
| | Muslim | 0 | 2 | 0 | 2 | | |
| Religion of family | Christian | 0 | 1 | 0 | 1 | | |
| | Sikh | 2 | 0 | 0 | 2 | | |
| | Total | 18 | 40 | 2 | 60 | | |
| | $\chi_{6}^{2} = 6.20$ p>0.05 | | | | | | |
| | < 3000/- | 2 | 0 | 0 | 2 | | |
| | 3001/- to 4000/- | 4 | 2 | 1 | 7 | | |
| Income of family per month | 4001/- to 5000/- | 6 | 12 | 0 | 18 | | |
| (in Rs.) | > 5000/- | 6 | 26 | 1 | 33 | | |
| | Total | 18 | 40 | 2 | 60 | | |
| $\chi_6^2 = 13.37$ p<0.05 | | | | | | | |
| | Illiterate | 1 | 0 | 0 | 1 | | |
| | Primary level | 4 | 2 | 1 | 7 | | |
| Educational status of mother and father | High school and above | 11 | 19 | 0 | 30 | | |
| | Graduate and above | 2 | 19 | 1 | 22 | | |
| | Total | 18 | 40 | 2 | 60 | | |
| | $\chi_{6}^{2} = 14.17$ p<0.05 | | | | | | |



| | House-wife | 11 | 28 | 1 | 40 | | |
|----------------------------------|----------------------------|-------------|---------|-----------------|-------|--|--|
| Occupation of mother | Govt. servant | 0 | 1 | 1 | 2 | | |
| Occupation of mother | Private business | 7 | 11 | 0 | 18 | | |
| | TOTAL | 18 | 40 | 2 | 60 | | |
| | $\chi_{4}^{2} = 15.1$ | 4 p<0.0 |)04 | | | | |
| | Normal | 12 | 32 | 1 | 45 | | |
| Information shout delivery | Forceps | 1 | 0 | 0 | 1 | | |
| information about derivery | Cesarean | 5 | 8 | 1 | 14 | | |
| | TOTAL | 18 | 40 | 2 | 60 | | |
| | $\chi^2_{\star} = 3.7$ | 5 p>0.0 |)5 | | | | |
| | <28 | 2 | 0 | 0 | 2 | | |
| Control on the Calculated | 28-32 | 2 | 2 | 1 | 5 | | |
| Gestation age of the child | 32-36 | 5 | 6 | 1 | 12 | | |
| (III weeks) | 37-40 | 9 | 32 | 0 | 41 | | |
| | TOTAL | 18 | 40 | 2 | 60 | | |
| | $\chi^2_{\epsilon} = 14.5$ | 53 p<0. | 02 | | | | |
| | 0 | 1 | 0 | 0 | 1 | | |
| | 1-7 | 3 | 18 | 0 | 21 | | |
| Age of neonates | 8-14 | 11 | 20 | 1 | 32 | | |
| (III days) | 15-21 | 3 | 2 | 1 | 6 | | |
| | TOTAL | 18 40 | | 2 | 60 | | |
| | $\chi_{e}^{2} = 11.2$ | 20 p>0. | 05 | | | | |
| | 0 | | | | | | |
| | < 1000 | 1 | 0 | 0 | 1 | | |
| Weight of neonates | 1000-1500 | 4 | 9 | 0 | 13 | | |
| (in grams) | 1501-2000 | 1 | 2 | 1 | 4 | | |
| | 2001-2500 | 11 | 19 | 1 | 31 | | |
| | > 2500 | 1 | 10 | 0 | 11 | | |
| | > 2500 Total | 1 | 10 | 2 | 60 | | |
| | $2x^2 - 120$ | 10 | 05 | 2 | 00 | | |
| | $\chi_{8} = 12.0$ | | 05 | | Т | | |
| Demographic Variable | Population | Pre-test Sc | core | Vorago Cood (17 | | | |
| (Criteria) | Particulars | Poor (0- | Average | Good (17- | Total | | |
| | Mala | 0) | (9-10) | 23) | 41 | | |
| Sex of the new born baby | Female | 14 | 2.5 | 2 | 10 | | |
| (Neonates) | ΤΟΤΔΙ | 20 | 30 | 1 | 60 | | |
| | $n = \frac{120}{n}$ | 15 | 1 | 00 | | | |
| $\lambda_2 = 2.50 \text{ proof}$ | | | | | | | |
| Days of hospitalization | 1-7 | 9 | 34 | | 44 | | |
| (in days) | 8-14 | / | 6 | 1 | 14 | | |
| | 15-21 | | 0 | 0 | 1 | | |
| | 22-28 | | 0 | 0 | 1 | | |
| | | 18 | 40 | 2 | 60 | | |
| $\chi_{s}^{2} = 10.56$ p>0.05 | | | | | | | |

CONCLUSION

After the detailed analysis, this study leads to the

following discussion: Data presented in frequency distribution shows that 30.0% mothers has poor



knowledge regarding the prevention of neonatal jaundices while 66.7 were found average in knowledge. After the implementation of planned health teaching program, there is a significant increase in knowledge of mothers regarding the prevention of neonatal jaundices. Which is calculated by t-test and the result was 19.18 it's significant. There was significant association between knowledge on prevention of neonatal jaundices and age of mother, monthly income, educational status occupation and gestational age of neonate old age of mother, less income, Low educational attainment, and less gestational age of the neonate is significant risk factor for neonatal jaundice. Hypothesis RH₁ made by the investigator that there is a significant increase of knowledge of the mothers regarding prevention of neonatal jaundices was accepted. The hypothesis RH_{2} made by the investigator that, there would be a significant association between selected demographic variable and pre test knowledge on prevention of neonatal jaundices was accepted with all

variables that are age, monthly income, educational status, occupation and gestational age of neonate was accepted.

Effectiveness: In this study effectiveness is the modifications in the way of mother for care their child.

Plan teaching programme: In this study planned teaching Programme refers to the information provided to mothers regarding management of neonatal jaundice.

Neonatal Intensive Care Unit (N.I.C.U.): - In my study NICU is place of high specialized care given to only neonates for severe problems.

Neonatal jaundice

Neonatal jaundice refers to the yellow coloration of the skin and sclera of newborn babies that result from hyperbilirubinaemia. Neonatal jaundice mainly divided in two pathological jaundice and physiological jaundice

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