

**A study to assess the level of knowledge among staff nurses in a View to
prepare a protocol on management of neonatal jaundice at a selected hospital,
Vadodara**

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ABSTRACT

Background: Jaundice commonly occurs in term newborns, with 15% to 30% of breast-feeding newborns having elevated bilirubin levels requiring medical intervention. Clinician treat jaundiced breast-feeding neonates in a variety of ways, including observation only, blood tests, modification of infant diet, and / or phototherapy. Although jaundice typically has a benign course in otherwise healthy newborns, clinical experience and studies revealed that mothers have an inadequate understanding of this condition and perceive it to be for more serious than it. There are various factors, which lead to hyperbilirubinemia specifically in infants. They are, increased production of bilirubin, decreased hepatic uptake of bilirubin from plasma, defective bilirubin conjugation, defective bilirubin excretion and increased inter hepatic circulation. At present neonates with hyperbilirubinemia can be best treated with phototherapy in the Neonatal Intensive Care Unit. The nurse must be having adequate knowledge and skill to manage the neonates with hyperbilirubinemia so there is a need to assess the knowledge of staff nurses regarding care of neonate.

Objective: The objective of the study is to assess pre-existing knowledge regarding care of the neonate with Jaundice with a view to prepare the protocol on care of baby with neonatal Jaundice.

Materials and methods: Descriptive research design were adopted in this study to assess the level of knowledge among nurses regarding care of the neonate with Jaundice working at a selected Hospital in Vadodara district. Non probability convenient sampling technique was used to select 60 staff nurses those who are working mainly at neonatal as well as pediatric wards in the Hospital.

Results: The result reveals that out of 60 participants nearly 27 (45%) of subject were having to adequate knowledge and 8 (13.3%) had average knowledge regarding care of the neonate with Jaundice. Remaining nurses 9 (15%) belong to poor knowledge category and 16 (26.7%) belongs to very poor knowledge category. As the computed chi-square value was lesser than the table value of $p < 0.05$ level significance there is no significant association between the level of knowledge regarding care of the neonate with Jaundice and selected socio demographic variables.

Conclusion: The study finding reveals that the knowledge of staff nurses regarding care of the neonate with Jaundice was considerable below average level. Only 45% of the total nurses are able to acquire the minimum score with the questionnaire. It indicates the necessity of a protocol for the treatment and care of neonates with neonatal jaundice. There was no significant association between finding with selected socio demographic variables.

Key Words: Knowledge, nurses, neonatal jaundice.

INTRODUCTION

The total population of the world is 6,574 Million of which Asia's population is 3712 Million. Three quarters of the world's Six billion people living developing countries. Each year the population of the world is increasing more than 270 million, over half the birth taken place in Asia (i.e.s, 120 Million). Children form a substantial proportion between 35 to 50% of the population, in the most developing country, amongst them 10 to 15% are neonatal. The period of life from birth to one month is commonly referred to as the neonatal period.¹

During this phase of life, the newborn functioning and behavior are mostly reflexive. Stabilization of major body function is the primary task of the neonate and occurs in a definite sequence of the physiologic events from the first day of life. During this period, the neonates are at risk of acquiring many problems. Among these, the major health problems are jaundice, infections, nutritional deficiency, Trauma and regulation of body temperature.²

Approximately of 60% of the million newborns are clinically jaundiced although most available data are based on infants, whose birth rate are more than 2500 grams and more than 37 completed weeks of gestation. Under certain circumstance severe hyperbilirubinemia can cost complication known as Kernicterus. The effects of Kernicterus range from fever, seizures and

high-pitched crying leading to mental retardation, bilirubin may be toxic to the central nervous systems and may cause neurological impairment in full term new borns.³

Physiological jaundice is a normal occurrence between the second and fourth day of life and appears in approximately 50% of all full-term newborns. Bilirubin levels may reach 6 to 10 mg/dl and resolution generally occurs during the seventh or eighth day. A bilirubin level exceeding 12 mg/dl for the full-term infant is suggestive of more than normal physiology and would be considered hyperbilirubinemia (Behrman).⁴

Jaundice commonly occurs in term newborns, with 15% to 30% of breast feeding newborns having elevated bilirubin levels requiring medical intervention. Clinician treat jaundiced breast feeding neonates in a variety of ways, including observation only, blood tests, modification of infant diet, and / or phototherapy. Although jaundice typically has a benign course in otherwise healthy newborns, clinical experience and studies revealed that mothers have an inadequate understanding of this condition and perceive it to be for more serious than it is.⁵

The role of developmental assessment is to see that the child is progressing as per norms set by a large majority of children of the same age. It is by no means a predictor of future intelligent quotient and any deviation from the normal is brought to the notice of the parents, only in reassuring ways. The cause and effect relation between developmental deficits and risk factors can be much more complicated than we imagine. We cannot presume that neonatal jaundice will lead to mental retardation, fine and gross motor abnormalities, hearing loss and vision problems. But most of the children have developmental disabilities after neonatal jaundice.⁶

Hence it is ideal to have some sort of developmental evaluation for all babies like measuring length, Head Circumference, Chest Circumference, Midarm Circumference, weighing weight & reflexes of the neonates. And using Trivandrum developmental screening chart and Denver developmental screening test. The Preliminary analysis and statistics from many child developmental centers and out-patient departments in hospitals have showed that babies with neonatal hyperbilirubinemia have higher incidence of delayed developmental milestones and other associated problems.⁷

Brown, in her study on breast feeding and jaundice demonstrated that jaundice occurs in 50 – 75% of newborn infants and is noted to occur more frequently and with greater severity in

breastfed infants. However, despite years of investigation of this common problem, many aspects of neonatal jaundice in healthy breastfed infants remain unexplained. Knowledge of the types, pattern and causes of jaundice in healthy breastfed neonates is reviewed and the potential effect of treatment options is discussed. She concluded that practices and interventions used by health care professionals decrease the duration of breastfeeding and increase the incidence and severity of jaundice.⁸

MATERIALS AND METHODS

Polit and Hungler state that a research design incorporates the most important methodological decisions that a researcher makes in conducting a research study. It depends the over all plan for organization of scientific investigation and also helps researcher in selection of subjects, manipulation of independent variables, observation of a type of statistical method to be used to interpret the data⁹. The selection of design depends upon the purpose of study, research approach and variables under the study. A quantitative research approach was used for this study. The study design was Descriptive research design. The setting of the study was Dhiraj General Hospital Piparia, Vadodara. The samples were staff Nurses working in Neonatal and pediatric areas of the selected hospital in Vadodara district. The samples were selected using non random sampling method that is convenience sampling technique. Total number of samples were 60. The tools used for data collection were divided in to two sections. Section – I includes the socio demographic variables of the subjects of the study. Section – II includes Self structured knowledge questionnaire for assessing the knowledge of staff nurses regarding care of newborn with neonatal jaundice.

RESULTS

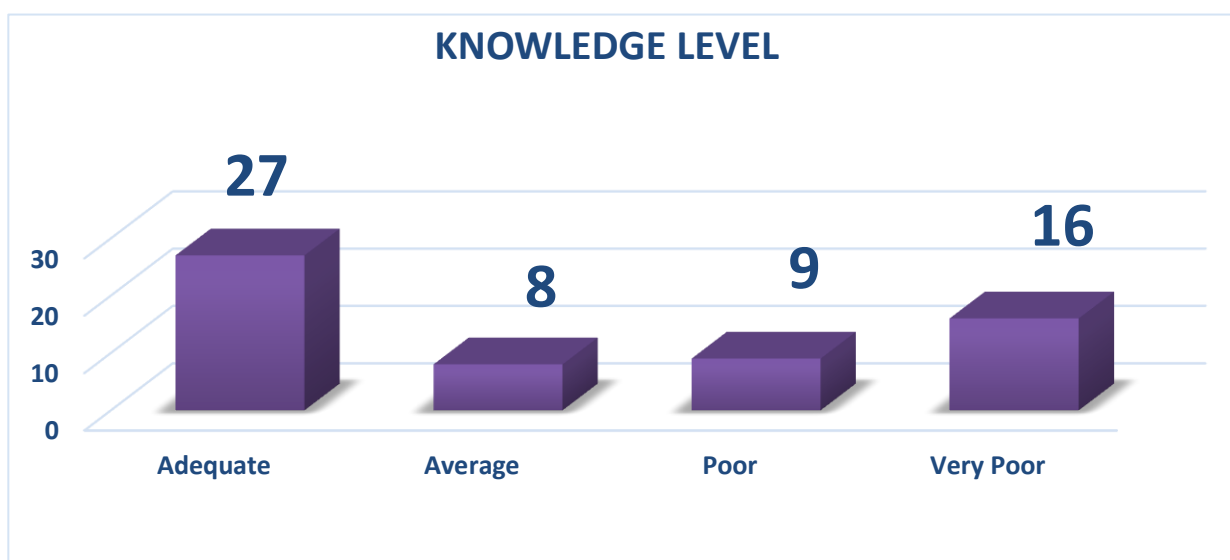
SECTION – A. Categorization of knowledge of Subjects on care of the neonate with Jaundice

Frequency and percentage of knowledge of Subjects on care of the neonate with Jaundice.

KNOWLEDGE	FREQUENCY	PERCENTAGE
Adequate	27	45%
Average	08	13.3%
Poor	09	15%

Very Poor	16	26.7%
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The above table shows that out of 60 participants nearly 27 (45%) of subject were having to adequate knowledge and 8 (13.3%) had average knowledge regarding care of the neonate with Jaundice. Remaining nurses 9(15%) belong to poor knowledge category and 16(26.7%) belongs to very poor knowledge category.



The Figure Shows the frequency of subjects based on the knowledge

SECTION – B. Association of Knowledge scores with Socio demographic Data

(Significant at 0.05 level)

Si.no.	Demographic variables	Chi Square Value	df	Significance
1	Age	8.357	09	Not significant
2	Gender	10.614	03	Significant
3	Educational Status	17.821	09	Significant
4	Previous Training – in Newborn care	6.576	09	Not significant
5	Experience	7.461	09	Not Significant
6	Marital Status	5.940	06	Not Significant

7	Previous Training – in Phototherapy	1.185	03	Not Significant
8	Medium of Study	0.143	03	Not significant
9	Source pf Information	10.996	18	Not Significant
10	Religion	14.247	06	Significant

The table signifies, at 0.05 level only three out of 10 selected demographic variables - Gender, Educational Status and Religion were significantly associated with the knowledge. The other selected variable such as Age, Previous Training – in Newborn care, Experience, Marital Status, Previous Training – in Phototherapy, Medium of Study, Source Information showed no association.

DISCUSSION

The study finding reveals that the knowledge of staff nurses regarding care of the neonate with Jaundice was considerable below average level. Out of 60 participants nearly 27 (45%) of subject were having to adequate knowledge and 8 (13.3%) had average knowledge regarding care of the neonate with Jaundice. Remaining nurses 9(15%) belong to poor knowledge category and 16(26.7%) belongs to very poor knowledge category. As the computed chi-square value was lesser than the table value of $p < 0.05$ level significance there is no significant association between the level of knowledge regarding care of the neonate with Jaundice and selected socio demographic variables. A well-constructed Nursing protocol can help in this scenario. Even the nurses are lacking knowledge and skills a planned protocol can function as a standing order for the nurse to function so that it can minimize the errors during the intervention. So as a sub part of this study the investigator prepared a nursing protocol for the better delivery of nursing care.

CONCLUSION:

The study finding reveals that the knowledge of staff nurses regarding care of the neonate with Jaundice was considerable below average level. Only 45% of the total nurses are able to acquire the minimum score with the questionnaire. It indicates the necessity of a protocol for the treatment and care of neonates with neonatal jaundice. There was no significant association between finding with selected socio demographic variables.

Conflict of interest: The authors declare that there is no any conflict of interest.

Source of funding: This is a self-funded research and all the expenses were borne by the investigator.

Ethical clearance: As the study conducted on humans, approval from institutional ethical committee was obtained before commencement of the study.

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