

A Study to Assess the Knowledge of Staff- Nurses Regarding the Care of Neonates On Photo Therapy in Selected Hospital, At Bhopal

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Abstract :

Introduction: All the parents have fruitful ambition to have healthy child. The child inherits their parent's characters and they are the future wealth of nation. The early life of the new born is the precious period and it is the risk period in human life cycle.

Materials & Methods: A quantitative research approach with a descriptive survey design was adopted for the study. A non-probability convenience sampling technique was used to select 50 staff nurses residing in the selected setting, Bhopal, Madhya Pradesh. Data were collected using a structured knowledge questionnaire regarding the care of newborns receiving phototherapy. The instrument consisted of two parts: Part I included socio-demographic data, while Part II comprised 25 multiple-choice items assessing knowledge regarding phototherapy, including its meaning and uses (items 1–7), nurses' role (items 8–20), and adverse effects (items 21–25). The collected data were analyzed using descriptive and inferential statistics, including mean, standard deviation, mean percentage, and mean difference percentage of knowledge regarding phototherapy.

Results: Mean of knowledge was Meaning and uses 83%, Nurses role 42.79%, and adverse effects 36.3% among the staff nurses. Over all knowledge mean was 13.22, SD 2.27 and mean Percentage was 52.88. Related to the different levels of knowledge 6% staff nurses have adequate knowledge, 52% moderate knowledge and 42% have Inadequate knowledge. *There is no significant association between the age, family income per month, years of experience sex, professional qualification, type of family and knowledge and knowledge*

Discussion:

Keyword: Assess; Knowledge; of Staff- Nurses; Regarding the Care of Neonates; Photo Therapy

INTRODUCTION

The newborn period is for the potential for the several complications. It varies from mild to severe in intensity. Some of the commonest problems are asphyxia neonatrum, neonatal convulsions, neonatal jaundice and infections.¹

The neonatal jaundice (NNJ) is still a leading cause of preventable brain damage, physical and mental handicap, and early death among infants in many communities. Nearly 70% of term and 80% of preterm infants develop Jaundice during the First week of life. Jaundice is the frequent diagnosis and reason of post discharge readmission in any neonatal set-up.²

Jaundice comes from the French word "jaune", which means yellow. When it is said a baby is jaundiced, it simply means that the colour of the skin appears yellow, which is often seen in the first few days after birth. The yellow colour is due to the bilirubin that is produced when red blood cells get old and

are broken down by the body. Most often, newborns with hyperbilirubinemia are treated with phototherapy.³

Phototherapy as a treatment modality has become the backbone of unconjugated hyperbilirubinemia in the neonate. It's noninvasive in nature and have fewer side effects as reported until now.⁴

The sunshine's fading effect on the yellow skin colour of jaundiced newborns was discovered accidentally by an observant nurse in 1956. The first, controlled treatments of the condition of hyperbilirubinaemia were indeed performed with sunlight as the light source, but were very soon followed by the use of blue-light fluorescent lamps.⁵

Two decades prior to the first phototherapy events, scientists had discovered the photoreactivity of bilirubin in vitro systems. Cremer et al. in 1958 used the later observation as a model to explain the more rapid recovery of jaundiced

newborns.⁶

The bulk of phototherapy research has been done on adverse effects, but unfortunately only a small part is relevant for in vivo conditions. The phototherapy is a boon to treat the person suffering with physiological jaundice.⁷

In the first week of life approximately 50% of new born infants have clinically detectable jaundice. The majority of these infants have no underlying disease and their jaundice results from the increased bilirubin production and decreased excretion which are normally seen in the newborn period. In a minority jaundice indicates a more serious underlying pathology such as hemolysis, septicemia or metabolic disease. Elevated serum bilirubin can damage neurons and for this reason it is measured in the newborn infant with obvious jaundice or signs of underlying disease.⁸

Photo therapy is not a harmless intervention. It can produce adverse effects on the baby and may disturb medical and nursing personnel. It includes lethargy, loose green stool, increased insensible water loss, dark urine, temperature elevation, skin changes - greenish colour, rash due to capillary dilation - skin rashes - no need to discontinue photo therapy, priapism (persistent abnormal erection of penis) retinal damage, hypo or hyperthermia increased and hypocalcaemia.⁹

Among the health care provider, the student nurses are main role to deliver the comprehensive care to the newborn some of the student nurses' roles are like eye shielding during the phototherapy, protecting the genitals, fluid maintenance, regular monitoring of temperature, serum bilirubin, weight and other adverse such as loose greenstools, lethargy, dehydration, hypocalcemia.¹⁰

OBJECTIVES OF THE STUDY:

- Assess the knowledge regarding the care of newborn during photo therapy among the student nurses.
- Associate the knowledge with the selected socio demographic variable.

RESEARCH HYPOTHESES

H₁: Socio demographic variables will have significant association with the level of knowledge.

MATERIALS & METHODS

Research Approach

The research approach adapted for this study was quantitative methods. Non experimental is a sub type of the quantitative methods helps to explain the effect of independent variable on the dependant variable. This study is a type of the Descriptive study- survey design.

Research Design

The research design used in this study is the descriptive survey design. This design to be most suitable for the study purpose to assess the knowledge regarding the care of newborn on photo therapy. This study not included the manipulation, control group. It is carried out by the non-probability –convenient sampling used in this study.

VARIABLES

Independent Variable

An independent variable is the variable that stands alone and it

is not depend on any other. In this study, the independent variable is student nurses included in the study.

Dependent Variable

The dependent variable in this study was level of knowledge regarding the care of newborn on phototherapy.

SETTING OF THE STUDY

The present study was conducted in the pediatric wards of the selected hospital Bhopal, M.P. The selected setting included the availability of the sample, availability of time, the geographical accessibility and population of the subjects in the selected hospital.

SAMPLE AND SAMPLING TECHNIQUE

Sample: Samples are the Staff nurses those who full fills inclusion and exclusion criteria.

Sample Size: The samples selected for this study are 50 Student nurses were selected for the study.

SAMPLING TECHNIQUE: In this study subjects were selected non probability convenient sampling technique. After selection of setting by convenient sampling method selected based on the inclusion and exclusion criteria.

SAMPLING CRITERIA.

Inclusion criteria:

- ❖ The samples are the student nurses in the selected setting.
- ❖ The student nurses those who are working in the pediatric ward.
- ❖ Both GNM and B.sc. (nursing) of the student nurses in the study.
- ❖ Both males and females included in the study.

Exclusion criteria:

- ❖ Age of the Student nurses of newborn.
- ❖ Those who are not willing to participate
- ❖ The nursing assistants working in the selected setting.
- ❖ Those who underwent any educational program related to photo therapy

Ethical Issues

Permission was obtained from the concerned authority.

Written informed concern was obtained from all participants of the study after explaining the purpose and other details.

The subjects were asked to maintain confidentiality.

The subjects were informed that their participation was voluntary, had the freedom to dropout the research work at any time.

RESULTS

The analyzed data has been organized and presented in the following sections:

Section 1 Description of selected socio demographic variables of the student nurses.

Section 2 Analysis and interpretation knowledge on phototherapy

Section 3 Associate the socio demographic variable with the knowledge

Table- 1– Distribution of student nurses according to socio demographic variables by frequency and percentage N=50

S.no	Socio demographic Variable	Frequency	Percentage
1	Age:		
	a) 20-21 years	5	10%
	b) 22 – 23 years	23	46%
	c) 24 -25years	8	16%
	d) 26 years and above	14	28%
2	Sex:		
	a)Male	8	16%
	b)Female,	42	84%
3	Professional Qualification		
	a) GNM	44	88%
	b) B.sc.(Nursing)	6	12%
4	family income per month		
	a) Rs. 10000>	10	20%
	b) Rs.10000 - Rs.15000	23	46%
	c) Rs.15001<	17	24%
5	Months of experience		
	a) 1 month>	18	36%
	b) 1-2 month.	26	52%
	c) 3 month<	6	12%
6	Type of family		
	a) Nuclear family	36	72%
	b) Joint family	14	28%

Table- 2 Aspect wise mean knowledge of photo therapy among the student nurses.

No.	Aspects	Max. Score	Respondents Knowledge		
			Mean	Mean %	SD
I	Meaning and uses of photo therapy	7	5.84	83%	0.99
II	Student nurse responsibilities related care of newborn on photo therapy	13	5.56	42.79%	1.87
III	Adverse effects of photo therapy.	5	1.82	36.3%	0.89
IV	Over all knowledge	25	13.22	52.88%	2.27

Table 3 -The distribution of the Knowledge Photo Therapy

Knowledge Level	Respondents	
	Number	Percentage
Adequate	3	6%
Moderate (51-75%)	26	52%
Inadequate (> 75%)	21	42%
Total	50	100.%

Table -4 Associations between age and knowledge level of respondents on phototherapy

Socio demographic Variable	Mean	SD	F-value
1. Age:			F=1.11 P=0.351 NS
a) 20-21 years	14.5	2	
b) 22 – 23 years	12.43	2.5	
c) 24 -25years	12.63	2.3	
d) 26 years and above	12.57	2.2	

NS – No Significance P > 0.05.

Table -5 Associations between sex and knowledge level of respondents on phototherapy

Socio demographic Variable	Mean	SD	t-value
2.Sex:			T=0.91 P=0.74 NS
a)Male	12.89	2.1	
b)Female,	12.62	2.4	

Table – 6 Associations between professional qualification and knowledge level of respondents on phototherapy.

Socio demographic Variable	Mean	SD	t-value
3.Professional Qualification			T=0.786 P=0.41 NS
a) GNM	12.77	2.4	
b) B.Sc. (Nursing)	12	1.7	

S* -Significance P < 0.001 NS – No Significance P > 0.05.

Table – 7 Associations between family income per month and knowledge level of respondents on phototherapy.

Socio demographic Variable	Mean	SD	F-value
4. Income per month(family)			F=0.9 P=0.41 NS
a) Rs. 10000>	13.57	2.7	
b) Rs.10000 - Rs.15000	12.39	2.5	
c) Rs.15001<	12.53	2	

NS – No Significance P > 0.05

Table – 8 Association between months of experience and knowledge level of respondents On phototherapy

Socio demographic Variable	Mean	SD	F-value
5. Years of experience			F= 0.746 P=0.47 NS
a) 1month>	12.44	2	
b) 1-2 months.	12.96	2.7	
c) 3 months<	12.17	1.5	

NS – No Significance P > 0.05.

Table – 9 Association between type of family and knowledge level of respondents On phototherapy

Socio demographic Variable	Mean	SD	T-value
6. Type of family			T=0.27 P=0.78 NS
a) Nuclear family	12.7	2.3	
b) Joint family	12.5	2.4	

NS – No Significance $P > 0.05$.

The overall mean knowledge score regarding phototherapy was 13.22 ± 2.27 (52.88%), indicating moderate knowledge. 52% of respondents had moderate knowledge, 42% inadequate and 6% adequate knowledge. The highest knowledge was found in **meaning and uses of phototherapy (83%)** and lowest in **adverse effects (36.3%)**. No significant association was found between knowledge and selected demographic variables ($p > 0.05$).

DISCUSSION

The results show that student nurses knew very little about phototherapy's side effects and just a reasonable amount about it overall. Similar results could be explained by gaps in clinical exposure and specialized phototherapy training. There was no discernible correlation between certain sociodemographic factors and knowledge.

CONCLUSION:

The Findings of the study recommended the further interventional approaches to about the importance of care of newborn on photo therapy various pediatric healths care setting Education about the importance of the care of newborn on photo therapy creates awareness; reduce in the health professional. The present study proved that knowledge in care of newborn on photo therapy inadequate among the nurses and necessary to improve it.

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