International Journal of Health Sciences and Research
Vol.12; Issue: 6; June 2022
Website: www.ijhsr.org
Original Research Article *ISSN: 2249-9571*

Effectiveness of Educational Intervention on Knowledge Regarding Nursing Care of Neonates under Phototherapy for Neonatal Jaundice Among Staff Nurses of Selected Wards of BPKIHS

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DOI: https://doi.org/10.52403/ijhsr.20220610

ABSTRACT

Introduction: Neonatal hyperbilirubinaemia is the most common clinical problem in the new born period Phototherapy has become the routine both for treatment of neonates with hyperbilirubinaemia and for prophylaxis in high risk patients such as preterm infants. The study was conducted to assess the Effectiveness of educational intervention on knowledge regarding nursing care of neonates under phototherapy for neonatal jaundice.
Methods: The research approach adopted for study was a pre-experimental one group pretest and post test design. Convenient sampling technique was used to select 50 samples from pediatric wards. A semi-structured knowledge questionnaire was administrated to find out the knowledge of the Nurses regarding care of neonates under phototherapy and then educational intervention was carried out, After 7 days of educational intervention; post test was conducted to find out its effectiveness. Data was analyzed by descriptive and inferential statistics.
Results: In pre-test majority 88% samples had moderate knowledge, 12% had adequate knowledge and no one had inadequate knowledge. Where as in post test 58% had moderate knowledge and 42% had adequate knowledge. Pre test mean value was 18.04 and Post test mean value was 20.16 and there was no association between pre-test knowledge score and demographic variables
Conclusion: Study concludes that, educational intervention on knowledge regarding care of neonates under phototherapy is effective in improving the knowledge level of the nurses

Keywords: Effectiveness, Educational Intervention, Neonates, Nurses, Knowledge, and Phototherapy

INTRODUCTION

The most common and relatively non-invasive treatment for Jaundice is Phototherapy around 1958; a very intelligent nurse in England noticed that the babies near the window in the hospital nursery were less likely to become jaundiced. Eventually it was discovered that light causes a chemical reaction in the bilirubin changing it to a form which can be excreted directly without needing to be conjugated in the liver. [1]. Health care is continually changing in the way nurses organize and deliver care to clients for this reason, nursing knowledge must continuously grow and expand to keep nursing care approaches relevant, current, and appropriate, without, new knowledge, nursing cannot improve techniques for therapies such as infant care, client education. Research based practice is essential if the nursing profession is to meet the needs of society for safe effective, and efficient nursing care. [2].

Neonatal hyperbilirubinaemia is the most common clinical problem in the new born period. Visible jaundice is seen in 30 percent to 50 percent of infants and in about 10 per cent the hyperbilirubinaemia requires treatment. Phototherapy has become the routine both for treatment of neonates with hyperbilirubinaemia and for prophylaxis in high risk patients such as preterm infants.[3]. Evidence for efficacy of treatment for neonates' hyperbilirubinaemia was limited. Phototherapy had an absolute risk reduction rate of 10 per cent to 17 per cent for prevention of serum bilirubin levels higher than 20mg/dl in healthy infants with Jaundice. There is no evidence to suggest that phototherapy for neonatal hyperbilirubinaemia has any long-term adverse neurodevelopment effects. [4].

New born infants often develop Jaundice which is concerning as a conjugated serum bilirubin can damage the developing brain. Since the 1960`s jaundice has been treated with phototherapy. [5]

Nurses play an important role in educating the mothers regarding basic knowledge and skills pertaining to care of children under phototherapy, which help to reduce the infant mortality.

Objectives

The objectives were; to assess the existing knowledge of the nurses regarding care of neonates under phototherapy, to find out the difference in their knowledge regarding care of neonates under phototherapy before and after educational intervention and to find out the association of knowledge with selected demographic variable.

MATERIAL AND METHODS

Quantitative evaluative research approach using the pretest and posttest design was adopted for the study. A pre-experimental one group pretest and post test study was conducted in December 2020 at B. P. Koirala Institute of health sciences, Dharan, Nepal. Convenient Sampling technique was used for the study. Total 50 nurses working in different pediatric wards (Pediatric ward unit-I, Pediatric ward Unit-II, NICU/PICU/Nursery and Neonatal ward) were included in the study. The nurses who were given consent and willing to participate voluntarily and having working experience of more than 6 months were included in the study. Nursing officer, senior staff nurses working in the pediatric wards of BPKIHS were excluded from the study.

Research Tool

A semi-structured question was used to assess the Effectiveness of educational intervention on knowledge regarding nursing care of neonates under phototherapy for neonatal jaundice among staff nurses. Knowledge obtained from the nurses was checked with a key model answer. The questionnaire was consisted of 31 questions and each question scored as1 (one mark) for correct answer and (zero) for each incorrect answer. The total score of the questionnaire was 31 grades (100%). The total score was converted into percentage and categorized into Adequate, Moderate and Inadequate. Since it was not standardized tool so the study was taken reference from the study conducted by dr. Vijay Laxmi Verma (2020) [10] for the category of knowledge. Three categories were made based on percentage and frequency score as adequate [(score 20-31) i.e. $\geq$ 65 %], moderate [(score 10-19) i.e. 30-65%] and Inadequate [(score 0-9) i.e. $\leq$ 30%].

Statistical Analysis

The collected data were revised, coded, tabulated and analyzed using the number, percentage distribution by using MS-Excel Program 2007. The data were analyzed using Statistical Package for the social Sciences for windows version 11.5(SPSS Inc; Chicago, IL, USA). For descriptive statistics, frequency, percentage, mean, and standard deviation were used. Paired t-test was used to compare significance difference of Knowledge score in pre test and post test. Chi-square test was

used to examine the association between demographic variables and knowledge score. Statistically significance set at p value < 0.05.

RESULT

Demographic data showed that 56 %(28) of the nurses were of age more than 23 years and 44 %(22) were of age equal to and less than 23 years. 100% of the nurses had Nursing Experience of more than 6 months. Among them 66% (33) were working in wards and 34% (17) were working in critical areas. None of the nurses had previous training on nursing care of neonates under phototherapy

Knowledge scores of nurses, shows in pre test majority 88% samples had moderate knowledge, 12% had adequate knowledge and no one had inadequate knowledge. Where as in post test 58% had moderate knowledge, 42% had adequate knowledge of the nurses regarding care of neonates under phototherapy after Educational intervention (Table 1)

Association between Pre-test and Post-Test Mean Knowledge Score of Nurses shows statistical Significance (P<0.001) difference between Pre-test knowledge score (18.04± 2.03) and Post-test knowledge score (20.16±1.79). Therefore, finding reveals that educational intervention on knowledge regarding nursing care of neonates under phototherapy was highly effective for staff nurses. (Table 2)

Association of Independent Variables with Knowledge of the Nurses shows that independent Variables with Knowledge of the Nurses Regarding Care of Baby under Phototherapy (Pre Test) were not found to be significant at 5% level of significance. (Table 3)

Table No.1: Pre test & post test knowledge score of Nurses (N = 50)

SN	Variables	PRE-TEST		POST-TEST	
	Knowledge Score	Frequency(N)	Percentage (%)	Frequency(N)	Percentage (%)
1	Adequate (>65%)	6	12.0	21	42
2	Moderate (30-65%)	44	88.0	29	58
3	Inadequate (<30%)	0	0.0	0	0.0

Table 2 Association between Pre-test and Post-Test Mean Knowledge Score of Nurses N=50

SN	Variables	Mean ± SD	P-Value
1	Pre-Test Knowledge Score	18.0 ± 2.03	<0.0001*
2	Post-Test Knowledge Score	20.16 ± 1.79	

***Paired t- test.**

Table 3: Association of Independent Variables with Knowledge of the Nurses Regarding care of baby under Phototherapy (Pre Test) N=50

SN	Variables	Knowledge level (Pre test)		P-Value	Remarks
		Moderate	Inadequate		
1	Age Category				
	≤23 years	19(38%)	3(6%)	0.54	NS
	>23 years	25(50%)	3(6%)		
2	Working Area				
	Wards	15(30%)	2(4%)	0.67	NS
	Critical Area	29(58%)	4(8%)		

Chi-square Test: Key: S=Significant, NS= Not Significant

DISCUSSION

The present study is focused on the Effectiveness of educational intervention on knowledge regarding nursing care of neonates under phototherapy for neonatal jaundice among staff nurses of BPKIHS, Dharan, Nepal. The finding of study where discussed as follows:

There is a statistical Significance (p<0.001) difference between pre-test knowledge score (18.04+/- 2.03) and post-test knowledge score (20.16+/- 1.79). Therefore findings revealed that educational intervention on knowledge regarding nursing care of neonates under phototherapy was highly effective for staff nurses. It shows that independent Variables with Knowledge of the Nurses Regarding care of baby under phototherapy (Pre-Test) were

not found to be significant at 5% level of significance.

Present study findings were supported by study conducted by Garg AK, in which, pre-test knowledge mean score was 23.55 and post-test mean score was 30.1 at the significance level 0.05 level. Study concludes the planned teaching program was effective to improve knowledge of Nurses.[6] · The study results were also supported by Karale RB et.al. Which reported pre-test knowledge mean score was 23.55 and post-test mean score was 30.1 at the significance level 0.05 level. Study concludes the planned teaching program was effective to improve knowledge of Participants. [7]. The Present study findings were also supported by study conducted by Tejas Pandya et al. revealed pre-test knowledge mean score was 15.18 and post-test mean score was 25.71 at the significance level 0.05 level.[8]

Regarding association between pre-test knowledge score of nurses with selected demographic variables as, Age and working area evidenced that there was no statistical association. These findings of study were supported by the Pandya et al study which showed that no significant association was found between pre-test knowledge scores with their selected demographic variables.[8].The finding of the study is also supported by Sapna N. et al and many studies.[9,11-13] .The present study finding is contra-indicatory with the study conducted by Garg AK et al. reported that there was a significance association between pre-test knowledge score of nurses with demographic variable as Age and Area of Placement.[6]

CONCLUSION

The findings of the study concluded that the educational intervention on knowledge regarding care of neonates under phototherapy is effective in improving the knowledge level of the nurses. Educational Programs, training, in-service education/CNE should be conducted to update the knowledge of nurses to manage neonates under phototherapy easily and effectively.

Acknowledgement: None
Conflict of Interest: None
Source of Funding: None
Ethical Approval: Approved

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How to cite this article: Yadav U., Karn B K. Effectiveness of educational intervention on knowledge regarding nursing care of neonates under phototherapy for neonatal jaundice among staff nurses of selected wards of BPKIHS. *Int J Health Sci Res.* 2022; 12(6):84-88.
DOI: *https://doi.org/10.52403/ijhsr.20220610*

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