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Original Research Article

Effectiveness of video assisted teaching programme on knowledge regarding care of neonates undergoing phototherapy among BSc (nursing) 3rd year students of Vivekananda college of nursing in Lucknow Uttar Pradesh

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ABSTRACT

Background: Neonatal period is the most vulnerable period of life with higher mortality and morbidity rate in human life. Jaundice is the condition in which the skin, sclera, body fluids and other tissues have a yellow discoloration which is caused by deposition of bile pigment. The aim of the study was to evaluate the effectiveness of video assisted teaching programme on knowledge regarding care of neonates undergoing phototherapy among BSc (nursing) 3rd year students of Vivekananda college of nursing in Lucknow.
Methods: A pre-experimental study conducted on 50 BSc nursing 3rd year student studying in Vivekananda college of nursing. Sample was selected on the basis of non-probability purposive sampling technique. The data collection was done by conducting pre-test with structured knowledge questionnaire regarding care of neonates undergoing phototherapy than after 7 days interval post-test was conducted with same structured knowledge questionnaire.
Results: Data was analyzed and interpreted by using both descriptive and inferential statistics. Distribution of BSc (N) 3rd year students according to level of knowledge showed that none of have adequate knowledge. Majority (62.00%) of students were having inadequate knowledge, 38.00% of BSc (N) 3rd year students were having moderate level of knowledge. Post-test knowledge scores shows that majority (54.00%) students had adequate level of knowledge, 46.00% students were having moderate level of knowledge whereas none of the students were having inadequate level of knowledge.
Conclusions: Pre-test findings showed that there was inadequate knowledge on care of neonates undergoing phototherapy among BSc (N) 3rd year students which was improved after given video assisted teaching programme.

Keywords: Evaluate, Effectiveness, Knowledge, Video assisted teaching, Phototherapy, Care during phototherapy, Neonates

INTRODUCTION

Neonatal period is the most vulnerable period of life with higher mortality and morbidity rate in human life. Jaundice is the most commonly seen in neonates.[1] Jaundice word comes from the French word 'jaune' which means 'yellow' when it is said that a neonate have jaundice, it simply means that the color of the neonate skin appears yellow.[3]

According to WHO (2007) neonatal jaundice is one of the most serious challenge in child health in both developed and developing countries. It is the single most important factor for determine the changes of child survival.

Physiological jaundice is commonly seen which appears between 30-72 hours of age, it reaches the maximum intensity by 5-7 days then gradually disappears by 10 days. In preterm it appears early around 48 hours, the peak intensity is 5-10 days and resolves by 10-15 days or within 1 to 2 weeks of age.[4] Phototherapy is the new preferred method of treatment for neonatal hyperbilirubinemia.[5] The term phototherapy means the use of light, especially ultraviolet light, to treat jaundice.[9] The effect of light on jaundice in neonates was first discovered in the 1950 at Rochford general hospital by a nurse named Sister Jean Ward who was the in charge of the premature unit. But the phototherapy has been used since 1958 for the treatment of neonatal hyperbilirubinaemia.[2] The effectiveness of phototherapy is determined by the irradiance, the surface area of exposure, and the light spectrum used. Irradiance is the radiant power and the irradiance in a specific wavelength band is termed the spectral irradiance and is expressed as micro-Watts per centimeter squared per nanometer.[4]

The lamps should be kept cool during phototherapy and be changed regularly after every 2000-3000 hours of use. Observing such precautions will ensure the efficacy and safety of phototherapy. The lights are checked by caregiver periodically for proper functioning.[6] Many types of jaundice seen in neonates such as pathological, physiological jaundice, breast milk jaundice, premature jaundice and breastfeeding jaundice. In which physiological jaundice is commonly seen in neonates which require phototherapy.[7,8]

Objectives

The objectives were to assess the pre-existing level of knowledge regarding the care of neonates undergoing phototherapy among BSc (N) 3rd year students of Vivekananda college of Nursing Lucknow (Uttar Pradesh); to evaluate the effectiveness of video assisted teaching program regarding the care of neonates undergoing phototherapy; to find out association between pretest knowledge scores with their selected socio-demographic variables.

Hypothesis

H_1

There was a significant difference between the pre-test and post-test knowledge scores regarding care of neonates undergoing phototherapy among BSc (N) 3rd year students of Vivekananda college of nursing Lucknow (Uttar Pradesh).

H_2

There was a significant association between the pre-test knowledge scores with their selected socio-demographic variables.

Assumptions

In this study the researcher assumed that: BSc (N) 3rd year students may have some knowledge regarding care of neonates undergoing phototherapy; BSc (N) 3rd year students will be able to know about care of neonate undergoing phototherapy. It was necessary to promote the growth of child and prevent the infection; the video assisted teaching programme will enhance the knowledge regarding care of neonates undergoing phototherapy.

Delimitations

The study was delimited to BSc (N) 3rd year students who were studing in Vivekananda college of nursing, Lucknow (Uttar Pradesh); fifty BSc (N) 3rd year students of Vivekananda college of nursing, Lucknow (Uttar Pradesh).

METHODS

Quantitative evaluative research approach using the pretest and posttest design was adopted. Pre-experimental one group pre-test and post-test research design was used. Study was conducted in Vivekananda college of nursing in Lucknow.

Population

BSc (N) 3rd year students of Vivekananda college of nursing Lucknow was the study population.

Sample size

50 BSc (N) 3rd year students were the sample size for this study.

Sampling technique

The sampling technique used was purposive sampling technique.

Inclusion criteria

In this study inclusive criteria were BSc (N) 3rd year students who were students of Vivekananda college of nursing Lucknow (Uttar Pradesh); who were willing to participate in the study.

Exclusion criteria

In the present study exclusion criteria were student nurses who were non cooperative to participate in the study; who were not available at the time of study.

Data collection tool

Tool consists of 2 parts,

Section I: Socio-demographic data: age, previous educational status, source of previous information, religion of the participant, employment status of parents, monthly income in family.

Section II- Structured knowledge questionnaire: structured knowledge questionnaire includes 30 multiple choice questions regarding care of neonates undergoing phototherapy.

Score interpretation

Knowledge items score 1 was awarded for each correct response and 0 for wrong response in all items. According to the scores attained the following criterion of interpreting the scores was developed.

Reliability

Reliability of the tool was tested for reliability by administering the structured knowledge questionnaire among the 10 BSc (N) 3rd year students of SGPGI. Reliability was established by using split half technique, where r was reliability co-efficient. The reliability of questionnaire was found r=0.8.

Study period

This study was conducted by the researcher from March 2018 to June 2019.

Ethical clearance

This research was conducted after an institutional review board approval was received from King George medical university (Ref. code: 91st ECM IID-a/P3).

Written formal permission was obtained from the research and ethical committee of Vivekananda college of nursing for conducting the study. Informed consent was obtained from the participants who enrolled for the study. Confidentiality and anonymity of the subject was maintained.

Data analysis

Descriptive statistic such as frequency and percentage were used to analyze the socio demographic variables. Mean, mean percentage and SD was used to assess the level of knowledge regarding care of neonates undergoing phototherapy. In inferential statistic, paired t test was used to compare pre-test and post-test scores and Chi square X^2 used to determine the association of pretest level of knowledge scores with selected socio-demographic variables.

RESULTS

Percentage distribution of students according to their age showed that 70.00% were in the age group of 21-22 years and 30.00% students were in age group 19-20 years (Figure 1). Distribution of students according to their previous educational status showed that majority 94.00% were intermediate and only 6.00% students were graduate (Figure 2). Distribution of students according to their source of previous information showed that 74.00% students had knowledge from clinical experience, 14% students had knowledge from books and only 12% students had previous knowledge through lecture (Figure 3). Percentage distribution of BSc (N) 3rd year students according to their religion of participant showed that 80.00% were from Hindu religion and 10.00% students from Muslim and Christian religion (Figure 4). In Figure 5 showed 44.00% were government employee, 32.00% student parents were business person, 12% student parents were retired and same 12% were farmers. And last distribution of students according to their monthly income in family showed that 66.00% having monthly income more than ₹20,000 and 14.00% were having income below ₹15,000 and 12% were having the monthly income ₹15,000-18,000 and only 8% were having the monthly income between ₹18,000-20,000.

Out of 50 students 62% in pre-test had inadequate knowledge, 38% had moderate and none of students were having adequate knowledge. In post-test, majority of student 54% had adequate level of knowledge, 46% students were having moderate knowledge and none had inadequate knowledge (Table 1). The mean pre-test knowledge score was 11.30 which improved to 20.44 in post-test at ($p<0.001$) shown at Table 2. And there was no association between the knowledge scores with socio demographic variables like age in year, previous education status, source of previous information, religion of the participant, employment status of parent and monthly income in family Table 3.

Table 1: Comparison of pre-test and post-test knowledge scores.

Level of knowledge	Pre-test score (%)	Post-test score (%)
Inadequate (0-33.3%)	62.00	0.00
Moderate (33.4-66.7%)	38.00	46.00
Adequate (66.8-100%)	0.00	54.00

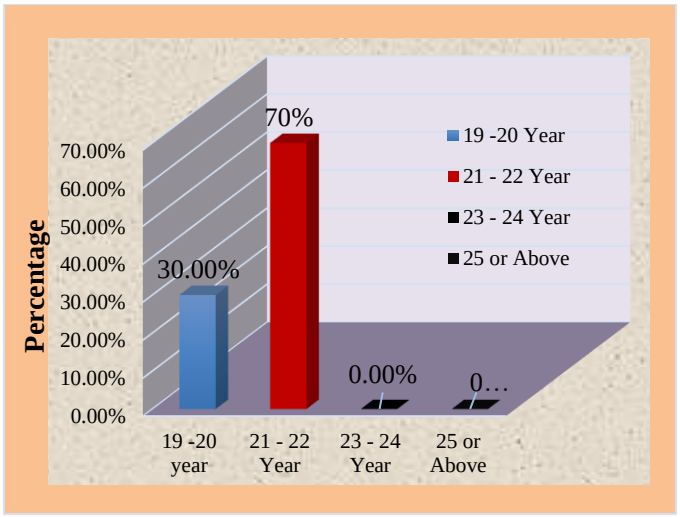

Figure 1: Percentage distribution of BSc (N) 3rd year students according to their age in year.

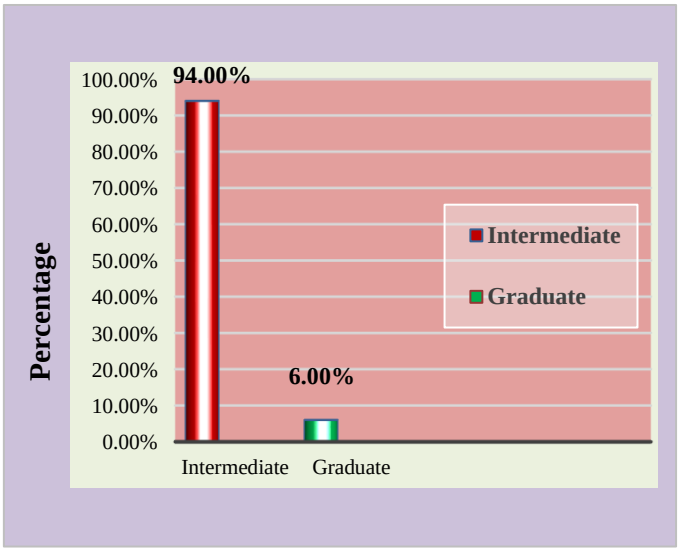

Figure 2: Percentage distribution of BSc (N) 3rd year students according to their previous educational status.

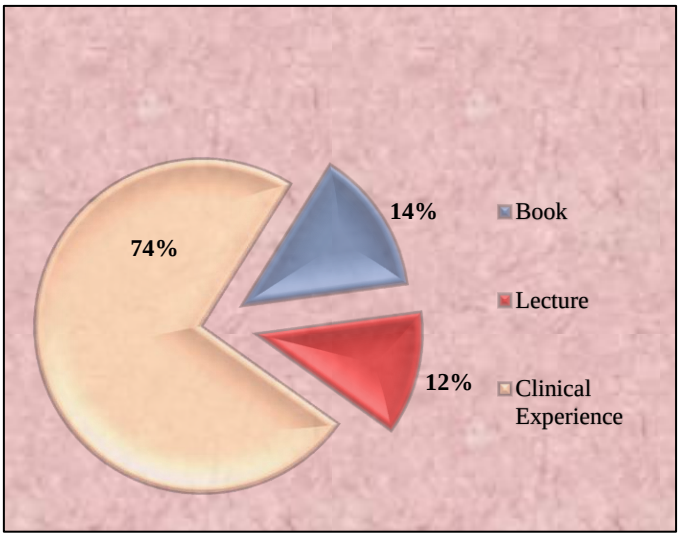

Figure 3: Percentage distribution of BSc (N) 3rd year students according to their source of previous information.

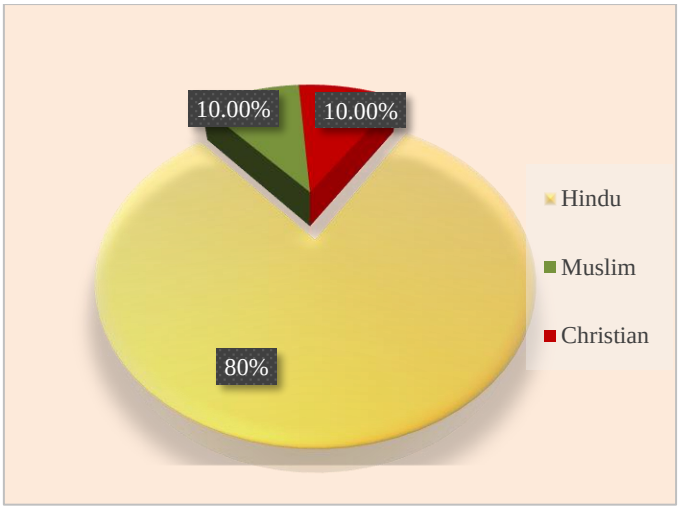

Figure 4: Percentage distribution of BSc (N) 3rd students according to their religion of participant.

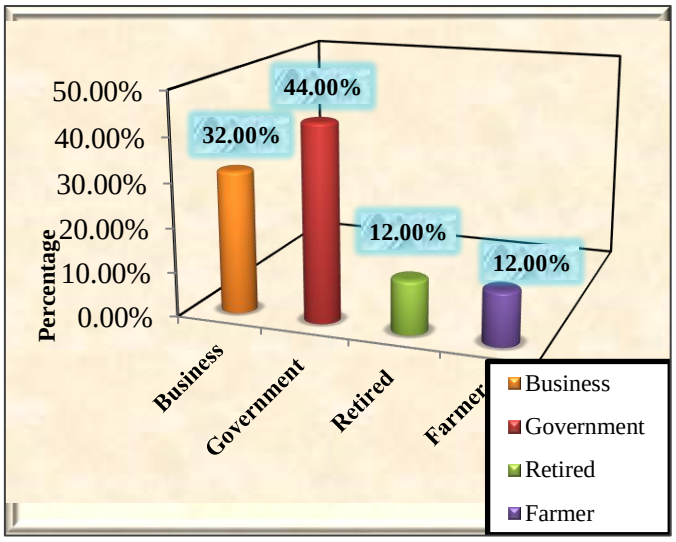

Figure 5: Percentage distribution of BSc (N) 3rd year students according to their employment status of parent.

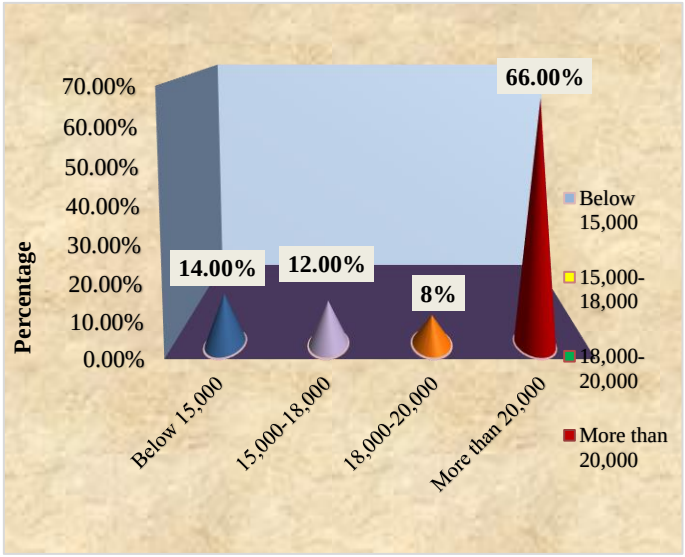

Figure 6: Percentage distribution of BSc (N) 3rd year according to their monthly income in family.

Table 2: Testing of hypothesis.

Knowledge scores	Mean and standard deviation	Mean difference and SD difference	t value	df	P value	
					Calculated value	Table value
Pre-test	11.30±3.26	9.14±2.72	23.777	49	<0.001*	2.009
Post-test	20.44±3.42					

t (49)=2.009; p<0.05.

Table 3: Association between the pre-test knowledge scores with their selected socio-demographic variables.

Variables	Level of knowledge				Statistical significance			
	Inadequate (n=31)		Moderate (n=19)		Chi square	df	P value	Table value (p<0.05)
	No.	%	No.	%				
Age (in years)								
19-20	10	32.3	5	26.3	0.198	1	0.656	3.84
21-22	21	67.7	14	73.7				
23-24	0	0.00	0	0.00				
25 or above	0	0.00	0	0.00				
Previous education status								
Intermediate	30	68.00	17	26.00	0.8319	1	0.106	3.84
Graduate	1	4.00	2	2.00				
Post graduate	0	0.00	0	0.00				
Source of previous information								
Book	3	9.7	4	21.1	0.942	2	0.379	5.99
Lecture	3	9.7	3	15.8				
Clinical experience	25	80.6	12	63.2				
Not exposed	0		0					
Religion of the participant								
Hindu	24	77.4	16	84.2	0.764	2	0.682	5.99
Muslim	3	9.7	2	10.5				
Christian	4	12.9	1	5.3				
Others	0	0.00	0	0.00				
Employment status of parents								
Business	8	25.80	8	42.1	2.217	3	0.529	7.82
Government job	14	45.2	8	42.1				
Retired	5	16.1	1	5.3				
Farmer	4	12.9	2	10.5				
Monthly income in family								
Below 15,000	3	9.7	4	21.1	1.469	3	0.690	7.82
15,000-18,000	4	12.9	2	10.5				
18,000-20,000	3	9.7	1	5.3				
More than 20,000	21	67.7	12	63.2%				

DISCUSSION

Our study finding showed that majority 70.00% students were from 21-22 years of age and 94.00% were have intermediate qualification, 74.00% had previous knowledge from their clinical experience, 80.00% student was Hindu, 44.00% student parents were government employees and 66.00% student parents had monthly

income more than 20,000. Which was supported by Rajashri et al study who found in her study that majority of samples 56% were belonged from the age group in 20-21 years, most of samples 82% were females, 58% samples stayed in rural area, majority of samples 70% were from Hindu religion and most of students had basic education qualification was science side.[11]

The second objective of the study was to evaluate the effectiveness of video assisted teaching program regarding the care of neonates undergoing phototherapy in Table 2. These findings were supported by a Azhagesan et al study which showed that the mean pre-test scores 76.66% in inadequate level of knowledge and 23.33% in moderate level of knowledge. The post-test mean score 63.33% in moderate level of knowledge, 30% in adequate level of knowledge and only 6.66% samples had inadequate level of knowledge. Conclusion of the study suggested that video assisted teaching was effective.[16]

Our study findings showed that the mean post-test knowledge scores of students were 20.44 and mean pre-test knowledge scores was 11.30. This showed the difference between pre-test and post-test score findings. This findings of the study were supported by a various study which indicated the significant difference between the value of pre-test and post-test knowledge scores.[12-17]

Table 3 showed that there was no association between the pre-test knowledge score and other demographic like age, previous education status, source of previous information, religion of the participant, employment status of parent and monthly income in family. 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 among age in year, medium of study, previous knowledge, source of knowledge.[15]

Limitations

This study also had some limitations. They were the size of the sample was small to draw generalization; the study was limited to the BSc (N) 3rd year students of Vivekananda college of nursing, Lucknow (Uttar Pradesh).

CONCLUSION

It was concluded that video assisted teaching programme was an effective to increase the knowledge level of BSc (N) 3rd year students regarding care of neonates undergoing phototherapy.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. John CP, Eichenwald EC, Stark AR. Manual of neonatal care. 6th ed. New Delhi: Lippincott Williams and Wilkins Pvt. Ltd.; 2010.
2. Gupte S. The short textbook of pediatrics. 11th ed. Delhi: Jaypee Brothers Medical Publishers Pvt. Ltd.; 2009.
3. Meharban S. Care of the newborn. 6th ed. New Delhi: Sager Publication Pvt. Ltd.; 2004.
4. Ghai OP. Ghai essential pediatrics. 7th ed. Delhi: CSB publishers and distributors; 2009.
5. Parul D. Pediatric nursing. 3rd edi. New Delhi: Jaypee Brothers Medical Publishers Pvt. Ltd.; 2014.
6. Arvind R. Applied neonatology. 1st ed. New Delhi: Jaypee Brothers Medical Publishers Pvt. Ltd.; 2006.
7. Behrman K, Stanton B, Geme S. Nelson textbook of pediatric nursing. 19th ed. New Delhi: Elsevier Publication; 2011.
8. Dorothy MR. Text book of pediatric nursing. 6th ed. New Delhi: WB Saunders; 2001.
9. Padmaja A. Textbook of child health nursing. 1st ed. New Delhi: Jaypee Brother's Medical Publishers (P) Ltd.; 2016.
10. Dutta AK, Sachdeva A. Advances in pediatrics. 1st ed. New Delhi: Jaypee Brother's Medical Publishers (P) Ltd.; 2007.
11. Rajashri KB. A study to assess the effectiveness of structured teaching program on knowledge and practice regarding phototherapy application among 3rd year R.G.N.M. nursing students at school of nursing, Krishna hospital, Karad, Maharashtra. Int J Health Sci Res. 2018;8(9):148-53.
12. Swapna N, Revathi D, Subhashin N, Arundhathi S, Indira S. A study to assess the effectiveness of self-instructional module on nursing care of child under photo therapy. Int J Appl Res. 2017;3(6):1025-7.
13. Punnen MM, Anila KP, Deepa S. A study to assess the knowledge and practice of mothers in care of newborn receiving phototherapy in a selected hospital, Kochi. Int J Nurs Ed. 2017;9(1):109-12.
14. Jahanara R, Nargis A. Effectiveness of a self-instructional module on phototherapy in terms of knowledge and practice among staff nurses of a selected hospital, Kolkata, West Bengal. Int J Sci Res. 2017;6(6):1706-10.
15. Pandya T. Effectiveness of planned teaching program on knowledge regarding care of the neonate under phototherapy among diploma internship nursing students in selected nursing schools at Gujarat state. Int J Adv Nurs Manage. 2015;3(2):75-80.
16. Azhagesan C. Effectiveness of video assisted teaching programme on knowledge regarding phototherapy for neonatal jaundice among third year BSc nursing students. Int J Pediatr Nurs. 2017;3(2):21-4.
17. Devi SK, Jena N. A study to assess the effectiveness of video assisted teaching module (VATM) on knowledge regarding care of newborn baby under

photo therapy among female health workers in selected hospital, Bhubaneswar Odisha. Int J Adv Nurs Sci Pract. 2015;2(1):29-35.

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