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A quasi-experimental study to assess the effectiveness of video assisted teaching programme on neonatal jaundice among students of B.Sc. nursing 4th year at P.G College of Nursing, Gwalior (M.P.)

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ABSTRACT

Neonatal jaundice refers to yellow coloration of the skin and sclera of newborn babies that result from accumulation of bilirubin in the skin and mucous membrane. This is associated with a raised level of bilirubin in the blood circulation, a condition known as hyperbilirubinemia. Bilirubin is a breakdown product of red cells in the blood. Red cell breakdown produces unconjugated bilirubin or indirect bilirubin, which is mostly bound to albumin. unconjugated bilirubin is metabolized in liver to produce conjugated or direct bilirubin then which passes through the gut and is excreted in the stool. Bilirubin can be reabsorbed again from stool remaining in the gut. Jaundice may also have other, non-physiological, causes, including blood group incompatibility, other causes of hemolysis sepsis bruising and metabolic disorder. Congenital obstruction and malformations of the biliary system, such as biliary atresia, causes an obstructive jaundice with conjugated hyperbilirubinemia. To assess the pretest knowledge level among experimental and control group of BSc Nursing 4th year students regarding neonatal jaundice. To assess the posttest knowledge level among experimental and control group of BSc Nursing 4th year students regarding neonatal jaundice. To evaluate the effectiveness of video assisted teaching programme on neonatal jaundice by comparing the pretest and post-test knowledge scores of experimental and control group. To compare the pretest and posttest knowledge scores of experimental group. To find the association between the pre-test knowledge

scores with their selected demographic variables. A Quasi-experimental research approach was adopted for the study to assess the effectiveness of Video Assisted Teaching Programme (VATP) in improving knowledge on Neonatal Jaundice among students of B.Sc. nursing 4th year. Pre-test and posttest design was adopted for the study. 60 students were included in the research study, 30 for experimental group and 30 for control group by using convenient sampling technique. In pretest it was found that the students had lack of knowledge on neonatal jaundice. After administration of video assisted teaching programme there was increase in the knowledge. So, it was concluded that video assisted teaching programme ensured the increase in knowledge of students of B.Sc. nursing 4th year which was beneficial for them.

Keywords: Quasi –experimental study, Effectiveness, Video assisted teaching programme, Neonate, Neonatal Jaundice, knowledge

INTRODUCTION:

Bilirubin is a breakdown product of the red cells in the blood. Red cell breakdown produces unconjugated (or 'indirect') bilirubin, which is mostly bound to albumin. Unconjugated bilirubin is metabolized in the liver to produce conjugated (or 'direct') bilirubin, which then passes through the gut and is excreted in the stool. Bilirubin can be reabsorbed again from stools remaining in the gut.

Neonatal jaundice refers to yellow colouration of the skin and sclera (whites of eyes) of newborn babies that result from accumulation of bilirubin in the skin and mucous membranes. This is associated with a raised level of bilirubin in the circulation, a condition known as hyperbilirubinemia.

Jaundice may also have other, non-physiological, causes, including blood group incompatibility, other causes of hemolysis sepsis bruising and metabolic disorder. Congenital obstruction and malformations of the biliary system, such as biliary atresia, causes an obstructive jaundice with conjugated hyperbilirubinemia. This condition needs specialist investigation and early surgical treatment, preferably before 8 weeks of life.

Levels of bilirubin can be controlled by placing the baby under a lamp emitting light in the blue spectrum, which is known as phototherapy. Light energy of the appropriate wavelength converts the bilirubin in the skin to a harmless form that can be excreted in the urine. Phototherapy has proved to be a safe and effective treatment for jaundice in newborn babies, reducing the need to perform an exchange transfusion of blood. the only other means of removing bilirubin from the body.

Objectives:

- To assess the pretest knowledge level among experimental and control group of BSc Nursing 4th year students regarding neonatal jaundice.
- To assess the posttest knowledge level among experimental and control group of BSc Nursing 4th year students regarding neonatal jaundice
- To evaluate the effectiveness of video assisted teaching programme on neonatal jaundice by comparing the pretest and post-test knowledge scores of experimental and control group.
- To compare the pretest and posttest knowledge scores of experimental group.
- To find out the association between the pre-test knowledge scores with their selected demographic variables

Methodology

Study design

In this study, Quasi-experimental research approach and Pre-test posttest research design was adopted.

Study population

The population in this study included B.Sc. Nursing 4th year students.

Study area

The present study was conducted in P.G College of Nursing, Gwalior (M.P).

Sample size

Size of the population consists of 60 students of BSc nursing 4th year. 30 for experimental group and 30 for control group.

Sampling method

In this study convenient sampling technique is used. Convenient sampling technique is a non- probability sampling technique. In which samples are selected due to their convenient accessibility and proximity of the researcher. The subjects are chosen just because of fact that they are very easy to recruit for the study.

Inclusion criteria

- Students of BSc Nursing 4th year.
- Students who were willing to participate in the study.
- Students who were present at the time of study.

Exclusion criteria

. Students who were not willing to participate in study.

. Students who were not available during the study.

Data collection tool

The self-structured knowledge questionnaire was used to collect the data from students of BSc nursing 4th year.

Development of tool

The study tool consists of two parts -

Part A: socio- demographic Performa:

Age of Students, gender, Area of Practice, Duration of posting in Neonatal Intensive Care Unit, Source of Information, Programme attended on neonatal jaundice.

Part B: knowledge questionnaire:

- 10 Questions regarding knowledge on Anatomy and physiology of the liver and gall bladder.
- 14 Questions regarding knowledge on neonatal jaundice.
- 09 Questions regarding knowledge on phototherapy
- 07 Questions regarding knowledge on complications

Data collection

A formal written permission was obtained from the P.G College of Nursing, Gwalior (M.P).. The data was collected in the month of October 2017. 60 subjects were collected by using convenient sampling technique. The researcher introduced himself to the respondents. And explained the purpose of study to the students. after this investigator collected the data from the students by using self-structured questionnaire to assess the knowledge of BSc nursing 4th year students on neonatal jaundice.

Statistical analysis

The data analysis was done in accordance with the objectives of the study. the collected data was tabulated and analyzed by calculating frequency, mean percentage, Mean, standard deviation, chi square and paired 't'

test. levels of significance chosen were P< 0.05. bar graphs pie chart, column diagrams were used to depict the findings. The data collectedwill be analyzed by using descriptive and inferential statistics.

Ethical clearance and informed consent

Institution's ethical review committee's permission was taken. Written permission was obtained from the ethical committee of P.G College of Nursing, Gwalior after explaining the type and purpose of study. The students had the freedom to withdraw from the study at any time without giving any reason and students concern was taken for the study.

RESULTS

Findings related to socio-demographic variables

It was founded that

- In control group: Age wise majority of students (90%) were in the age group of 21- 22yrs. 6.66% in 18-20 yrs. and rest 3.33% in above 23yrs in experimental group: Age wise majority of students (76.66%) were in the age group of 21-22 yrs.13.33% in 18-20yrs and rest 10% in above 23yrs.
- Majority of students (80%) were female and rest (20%) were male; in both the groups.
- As regard to area of practice 100% of students practiced in Government hospital.
- As regard to the duration of posting in NICU: In control Group: majority of students (86.66%) had been posted for 2-3 weeks in NICU; 3.33% for 4-5 weeks and 10 % for more than 5 weeks. + In Experimental Group: 100% students had been posted for 2-3 weeks in NICU.
- As regard to source of information: In control group 100% students acquire information through books. In Experimental Group: 93.33% students acquire information through books; 3.33% through mass media and rest 3.33% through journals
- As regard to any conference/seminar attended on neonatal jaundice; majority of students (100%) had not attended programme regarding neonatal jaundice in both the groups. control and experimental.

findings related to knowledge score

- **pre-test knowledge scores of control group:**

Out of 30 students, Majority (66.66%) student's knowledge was average, (26.66%) student's knowledge was good, (3.33%) student's knowledge was very good, (3.33%) student's knowledge was poor.

- **pre-test Knowledge scores of experimental group.**

Out of 30 students, Majority (66.66%) student's knowledge was average, (26.66%) student's knowledge was good, (3.33%) student's knowledge was very good, (3.33%) student's knowledge was poor.

- **Post Test Knowledge Scores of Control Group.**

Out of 30 students, Majority (66.66%) student's knowledge was average, (26.66%) student's knowledge was good, (3.33%) student's knowledge was very good, (3.33%) student's knowledge was poor.

- **Post-test Knowledge scores of experimental group.**

Out of 30 students, Majority (70%) student's knowledge was very good, (26.66%) student's knowledge was good, (3.33%) student's knowledge was average, and no one was in poor knowledge category after the test in experimental group.

Findings related to effectiveness of video assisted teaching programme on neonatal jaundice by comparing the pre-test and post-test knowledge scores of control and experimental group.

This section deals with pre-test and post-test knowledge scores which were obtained from the structured questionnaire on neonatal jaundice. This part shows the effectiveness of video assisted teaching programme in terms of knowledge increased.

- **comparison of frequency of pre-test and post-test knowledge scores of control group.**

There is no difference in the pre-test and post-test knowledge scores of control group.

- **comparison of frequency of pre-test and post-test knowledge scores of experimental group.**

There is a great difference in the pre-test and post-test knowledge scores of experimental group, as there is gain in the knowledge level after the administration of video assisted teaching programme.

- **mean, standard deviation of pre test and post test knowledge scores of control group and experimental group.**

Mean of pre-test and post-test value of control group are 18.2 and 18.36; and of experimental groups are 18 and 32.46 respectively, standard deviation of pre-test and post-test value of control group are 4.77 and 4.78; and of experimental group are 4.91 and 4.57 respectively.

- **comparison of Mean, standard deviation of pre-test and post-test knowledge score of control and experimental group.**

There is increase in knowledge after the administration of video assisted teaching programme in experimental group. Thus, the video assisted teaching programme is effective.

- **Mean, standard deviation of pre-test and post-test of knowledge scores of control and experimental group, its significance by paired 't' test.**

To determine the significant difference in the mean post-test knowledge scores between the control group and experimental group. paired t test was computed. To calculate the significance difference between post-test knowledge scored. the hypothesis stated There will be significant difference in the mean post-test knowledge scores between the experimental and control groups of BSc Nursing 4th year students.

comparison of frequency of pre-test and post-test knowledge scores of experimental group.

- There is a great difference in the pre-test and post-test knowledge scores of experimental group, as there is gain in the knowledge level after the administration of video assisted teaching programme

Findings related to the association between the pre-test knowledge scores with their selected demographic variables

- Association of pre-test knowledge score with demographic variable was done using chi-square test. Present study showed that the duration of posting in NICU of control group showed a significant association with pre-test findings of the nursing students. According to the hypothesis of the study the investigator found that there is significant association between pre-test with selected demographic variable, hence alternative hypothesis is accepted.

DISCUSSION

The purpose of the study was to assess the effectiveness of video assisted teaching programme on neonatal jaundice in improving knowledge of the students. Before administration of video assisted teaching programme, no one was in the very good category. But after administration of video assisted teaching programme most of the students were in very good category. In pre-test it was found that the students had lack of knowledge on neonatal jaundice. After administration of video assisted teaching programme there was increasement in the knowledge. So, I concluded that video assisted teaching programme ensured the increasement in knowledge of students which was beneficial for them. Findings of this study in relation to other studies, earlier studies conducted by other researcher also showed that other teaching strategies like planned teaching programme. pamphlets. computer assisted learning etc. are helpful in increasing the knowledge of students.

Conclusion:

In pretest it was found that the students had lack of knowledge on neonatal jaundice. After administration of video assisted teaching programme, there was increase in the knowledge. So, it was concluded that video

assisted teaching programme ensured the increase in knowledge of students of B.Sc. nursing 4th year which was beneficial for them.

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DECLARATIONS

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Ethical approval: the study was carried out after obtaining approval from the institutional ethical committee of P.G College of Nursing Gwalior.

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TABLE-1

SR. NO	CATEGORIZATION	QUESTIONS		SCORE	
		Question no.	**No of questions**	**Minimum**	**Maximum**
1.	Questionnaire regarding knowledge on Anatomy and physiology of the liver and gall bladder.	1-10	10	0	10
2.	Questionnaire regarding knowledge on neonatal jaundice	11-24	14	0	14
3.	Questionnaire regarding knowledge on phototherapy	25-33	09	0	09
4.	Questionnaire regarding knowledge on complications	24-40	07	0	07

Table -1 categorization of 40 questions of knowledge questionnaire

TABLE-2

Demographic Variables	Control Group (n=30)		Experimental Group (n=30)	
	Frequency	**Percentage**	**Frequency**	**Percentage**
1. Age of Student:				
a) 18-20 Yrs.	02	6.66%	04	13.33%
b) 21-22 Yrs.	27	90%	23	76.66%
c) Above 23 yrs.	01	3.33%	03	10%
2. Gender:				
a) Male	06	20%	06	20%
b) Female	24	80%	24	80%
3. Area of Practice:				

a) Government Hospital	30	100%	30	100%
b) Private Hospital	00	0%	00	0%
4. Duration of posting in Neonatal Intensive Care Unit:				
a) 2-3 Weeks	26	86.66%	30	100%
b) 4-5 Weeks	01	3.33%	00	0%
c) More than 5 weeks	03	10%	00	0%
5. Source of information:				
a) Mass Media	00	0%	01	3.33%
b) Journals	00	0%	01	3.33%
c) Books	30	100%	28	93.33%
6. Have you ever attended any seminar or workshop regarding neonatal jaundice for past years?				
a) Yes	00	0%	00	0%
b) No	30	100%	30	100%

Table-2 Frequency and percentage distribution of student's Age, Gender, Area of Practice, Source of information, Duration of posting in NICU, Attended programme.

TABLE-3

S.No.	Categories	Control Group		Experimental group	
		Frequency	Percentage	Frequency	Percentage
1.	Poor	01	3.33%	02	6.66%
2.	Average	20	66.66%	19	63.33%
3.	Good	08	26.66%	08	26.66%
4.	Very Good	01	3.33%	01	3.33%

Table-3 Frequency and Percentage Distribution of pre-test knowledge of Control group and experimental group.

TABLE-4

S.No.	Categories	Control Group		Experimental group	
		Frequency	Percentage	Frequency	Percentage
1.	Poor	01	3.33%	00	0%
2.	Average	20	66.66%	01	3.33%
3.	Good	08	26.66%	08	26.66%
4.	Very Good	01	3.33%	21	70%

Table-4 Frequency and Percentage Distribution of post-test knowledge of Control group and experimental group

TABLE-5

Category of Knowledge	Control Group				Experimental group			
	Pre Test		Post Test		Pre Test		Post Test	
	N	%	n	%	N	%	n	%
Poor	01	3.33%	01	3.33%	02	6.66%	00	0%
Average	20	66.66%	20	66.66%	19	63.33%	01	3.33%
Good	08	26.66%	08	26.66%	08	26.66%	08	26.66%
Very Good	01	3.33%	01	3.33%	01	3.33%	21	70%

Table-5 Grading of pre-test and post-test knowledge scores of control and experimental group.

TABLE-6

Knowledge Score	Control Group		Experimental group	
	Mean	S.D.	Mean	S.D.
Pre-Test	18.2	7.77	18	4.91
Post Test	18.36	4.78	32.46	4.57

Table-6 Table showing mean, standard deviation of pre-test and post-test knowledge scores of control group and experimental group.

TABLE-7

Knowledge	Mean	S.D.	Paired 't' test
Pre-Test	18.2	4.77	2.40
Post Test	18.36	4.78	

Table-7 Table showing mean, standard deviation and paired 't' test value of pre-test and post-test knowledge scores of control group.

TABLE-8

Knowledge	Mean	S.D.	Paired 't' test
Pre Test	18	4.91	26.19
Post Test	32.46	32.46	

Table-8 Mean, standard deviation and paired 't' test value of pre-test and post-test knowledge scores of experimental group.

TABLE-9

Domain	Max Scores	Pre Test			Post Test		
		Mean	SD	Mean%	Mean	SD	Mean%
Anatomy and physiology of liver	10	6.97	1.38	69.7%	9.4	0.62	94%
Knowledge on neonatal jaundice	14	6.23	2.46	44.5%	11.3	1.64	80.71%
Knowledge on phototherapy	09	3.4	1.77	37.77%	6.57	1.65	73%
Knowledge on complications	07	1.4	1.13	20%	5.2	1.42	74.28%
Overall	40	18.00	4.91	45%	32.47	4.57	81.17%

Table-9 Area wise findings of pre-test and post-test knowledge scores of experimental group.

TABLE-10 **N=30**

Domain	Max Scores	Enhancement			Paired 't' test
		Mean	SD	Mean%	
Anatomy and physiology of liver	10	2.43	0.76	24.3%	**26.19**
Knowledge on neonatal jaundice	14	5.07	0.82	36.21%	
Knowledge on phototherapy	09	3.17	0.12	35.23%	
Knowledge on complications	07	3.8	0.29	54.25%	
Overall	40	14.47	0.34	36.17%	

Table-10 Area wise enhancement of knowledge regarding neonatal jaundice.

TABLE-11

Domain	Max Scores	Pre Test			Post Test		
		Mean	SD	Mean%	Mean	SD	Mean%
Anatomy and physiology of liver	10	6.97	1.38	69.7%	9.4	0.62	94%
Knowledge on neonatal jaundice	14	6.23	2.46	44.5%	11.3	1.64	80.71%
Knowledge on phototherapy	09	3.4	1.77	37.77%	6.57	1.65	73%
Knowledge on complications	07	1.4	1.13	20%	5.2	1.42	74.28%
Overall	40	18.00	4.91	45%	32.47	4.57	81.17%

Table-11 Area wise findings of pre-test and post-test knowledge scores of experimental group.

TABLE-12

N=60

Demographic Variables	Control Group (n=30)				Experimental Group (n=30)			
	Chi Sq. Value	D.F.	Table Value	Level of Significance	Chi Sq. Value	D.F.	Table Value	Level of Significance
1. Age of Student	1.66	3	7.82	Non-Significant	3.64	2	5.99	Non-Significant
2. Gender	0	1	3.84	Non-Significant	0.88	1	3.84	Non-Significant
3. Area of Practice	0	1	3.84	Non-Significant	0	1	3.84	Non-Significant
4. Duration of Posting in NICU	6.97	2	5.99	Non-Significant	0	2	5.99	Non-Significant
5. Source of information	0	2	5.99	Non-Significant	1.06	2	5.99	Non-Significant
6. Attended any seminar or workshop regarding neonatal jaundice for past years	0	1	3.84	Non-Significant	0	1	3.84	Non-Significant

Table-12. Findings related to the association between the pre-test knowledge scores with their selected demographic variables