EFFECTIVENESS OF VAT ON KNOWLEDGE REGARDING OXYGEN DELIVERY METHOD IN CHILDREN AMONG STUDENT NURSES AT SELECTED UNIVERSITIES OF GURUGRAM, HARYANA

Kusum*[1], Anu Gauba[2] and Naveena J. H.[3]

[1]M.Sc Nursing Student, Amity Nursing College, Amity University, Gurugram, Haryana.
[2]Professor, Department of Community Health Nursing, Amity Nursing College, Amity University, Gurugram, Haryana.
[3]Assistant Professor-3, Department of Community Health Nursing, Amity Nursing College, Amity University, Gurugram, Haryana.

*Corresponding Author: Kusum

M.Sc Nursing Student, Amity Nursing College, Amity University, Gurugram, Haryana.

ABSTRACT

Background: Every year, over 5.9 million children die, mostly from preventable or easily treatable diseases, and more than 95% of those deaths occur in developing countries. Pneumonia is the leading cause of death in children under 5 years of age, being responsible for at least 18% of all deaths in this age category. Oxygen is the most commonly used drug in clinical settings, and it, like other drugs, is used with caution. True, individuals who have trouble breathing or are suffering from respiratory failure are at risk of developing hypercapnia or may develop this issue. **Objectives:** To evaluate the effectiveness of VAT on knowledge regarding oxygen delivery method in children among student nurses. **Methodlogy:** The quantitative research approach was adopted for the study with "quasi-experimental pre-test post-test control group design." The present study was conducted among 80 student nurses of SGT university Gurugram, Haryana. There were 40 students in experimental group and 40 students in control group. Purposive sampling technique was applied. The experimental group was exposed to VAT (video assisted teaching program) on oxygen delivery method in children. The pre-test and post-test scores of the students were assessed on day 1 and day 7 respectively. The data collected was analysed using descriptive and inferential statistics using SPSS 21. **Results:** The findings of the study revealed that the mean post-test knowledge scores (33.20) of experimental group were higher than the mean post-test knowledge scores (13.20) of control group. This obtained mean difference was found to be statistically significant as evident from the 't' =22.758, df-39 and P= .000 level of significance. In experimental group significance association between the score level and demographic variables i.e. age, residence and in control group significance association between the score level and demographic variables i.e. religion. **Conclusion:** The Video assisted teaching program on oxygen delivery method in children was more effective in enhancing the knowledge of B.Sc. Nursing 3rd year student nurses regarding oxygen delivery method in children. Study can be conducted on subject of different colleges, Oxygen delivery method in children can be utilized in other area of nursing practice.

KEYWORDS: Effectiveness, VAT, Oxygen delivery, children, Student nurses.

INTRODUCTION

Oxygen is the most important element for living beings because it sustains life on the planet earth. It is said that 90 per cent of our biochemical and metabolic activities need oxygen. When we breathe, we take in oxygen and breathe out carbon dioxide. Oxygen is taken from lungs through hemoglobin and travels to every cell in the body. It is also highly advised that we breathe through the nose as it has structures that clean and filter the air before it reaches your lungs. Adequate level of oxygen is required for living a life full of energy. In case there is a fall in oxygen level one can use oxygen cylinders for raising the level.[1]

Oxygen therapy plays a major role for respiratory care to treat hypoxemia in pediatric critical care medicine. Oxygen delivery patterns have devices that vary from a simple nasal cannula to sophisticated humidified

systems. Several methods of non-invasive oxygen delivery patterns for children include head box oxygen (oxy hood), free flow oxygen source held close to infants' nose, facemask, nasal prongs, nasal catheter and nasopharyngeal catheter.[2] Undoubtedly, oxygen therapy is an important tool that has saved many lives and improved others.[3]

Video-assisted learning is an effective method for teaching and learning that helps students understand topics and improves their ability to learn. Audiovisual content is a versatile tool for teaching and learning. When used imaginatively, video may efficiently impart complicated knowledge to students and can also serve as a powerful expressive tool. Other researchers have observed similar findings.[4]

NEED OF THE STUDY

Among 334 million people who suffer from asthma globally, 14% are children with chronic diseases of childhood including respiratory disorders. In India among 26.3 million cases, the incidence rate of respiratory disorders in children is about 2,173 cases per lakh who at some point of treatment require oxygen or ventilation. In order to assess oxygenation correctly, an understanding of the ABG values, relationship between partial pressure of oxygen (PaO_2) and SpO_2 are required.[5]

Review of Literature

A study to assess the Effectiveness of video assisted teaching program on knowledge regarding hyperbaric oxygen therapy among B.Sc. nursing students. simple random sampling technique of 2nd and 3rd year B. Sc. Nursing students (50). In this study, the pre-test findings revealed that majority (60%) of the students were having average knowledge and 40% of the students were having the poor knowledge regarding HBOT, with the mean score of 14.50 ± 3.564. The findings from post-test represents that majority (68%) were having good knowledge and 32% of the respondents were having the average knowledge regarding HBOT with the mean score of 34.40 ± 2.330. The significant association was found between Gender and post-test knowledge scores ($x2 = 3.687$ df=1 p< 0.05). The investigator concluded that the video-assisted teaching programme can improve the knowledge regarding Hyper baric oxygen therapy among B.Sc. Nursing students.[6]

A study was conducted on oxygen delivery methods use in the covid-19 patients. Researcher studied various ODMs used by 100 COVID-19 patients, aged 18 years or above admitted to Chitwan Medical College and Teaching Hospital during July to October 2021 and the trend of how the ODMs changed during the hospital stay. Results shows that, in this study, oxygen supplementation at presentation using nasal cannula was required by 74% of patients, face mask by 13%, Venturi mask 34%, non-rebreathing mask 25%, high-flow nasal cannula 27%, non-invasive ventilation 6%, and invasive

mechanical ventilation by 21%. There was significant difference in the use of ODMs at presentation among the moderate, severe and critical COVID-19 groups (P< 0.001). There was a wide range of switching between various ODMs during the treatment course.[7]

Objectives

To evaluate the effectiveness of video assisted teaching program by comparing the post-test knowledge scores of student nurses in experimental and control group.

Null Hypothesis

H_{01}: There will be no significant difference between mean post-test knowledge scores of B.sc 3rd year student nurses related to video assisted teaching program between experimental and control group at 0.05 level of significance.

Methodlogy

Research approach: Quantitative approach.
Research design: Quasi experimental pretest posttest design
Independent variable: Video assisted teaching program
Dependent variables: Oxygen delivery method in children
Setting: SGT University, Gurugram, Haryana
Population: Student nurses in SGT University.
Sample: BSc Nursing 3rd year student Nurses of SGT University.
Sampling Technique: Non-Probability Purposive Sampling.
Sample Size: The total sample size was 80 for the study, Experimental (n_1=40) and Control (n_2=40) group.

Criteria for Sample Collection
Inclusion criteria
- The Student nurses who are studying in selected University of Delhi NCR.
- BSc nursing 3rd year student nurses who are willing to participate in the study
- BSc nursing 3rd year student nurses who are available or present at the time of the study.

Exclusion criteria
- BSc nursing 3rd year student nurses who are not willing to participate in the study
- BSc nursing 3rd year student nurses who are on leave or absent on the day of data collection.

Tool for data collection
Section A- Demographic data of BSc nursing 3rd year student nurses.
Section B- Structured knowledge questionnaire related to oxygen delivery method in children.

RESULTS AND ANALYSIS

Section A: Finding related to demographic characteristics of the sample (student nurses).

Section B: Findings related to compare the mean pre-test and post-test knowledge scores in Control group

Section C: Findings related to association of demographic variables with pre-test knowledge scores in Experimental group and control group.

Section A: Finding related to demographic characteristics of BSc nursing 3rd year student nurses.
Table 1: Frequency and percentage distribution of BSc. Nursing 3rd year student nurses according to their demographic characteristics n1+n2=80.

SOCIO DEMOGRAPHIC VARIABLES		Experimental (%)	Control (%)	Experimental (n_1=40)	Control (n_2=40)
AGE	20 years	37.5%	30.0%	15	12
	21 years	62.5%	70.0%	25	28
GENDER	Female	57.5%	62.5%	23	25
	Male	42.5%	37.5%	17	15
RELIGION	Hindu	87.5%	87.5%	35	35
	Muslim	12.5%	12.5%	5	5
	Sikh	0.0%	0.0%	0	0
	Christian	0.0%	0.0%	0	0
	Other	0.0%	0.0%	0	0
INCOME	0- 25000 Rs	17.5%	12.5%	7	5
	25001-50000 Rs	27.5%	25.0%	11	10
	50001-75000 Rs	25.0%	35.0%	10	14
	75000-100000 Rs	30.0%	27.5%	12	11
RESIDENCE	Urban	70.0%	67.5%	28	27
	Rural	30.0%	32.5%	12	13
TYPE OF FAMILY	Nuclear	72.5%	80.0%	29	32
	Joint	27.5%	20.0%	11	8
	Extended	0.0%	0.0%	0	0
ATTENDED Any Training Program On Oxygen Delivery Method In Children	Yes	0.0%	0.0%	0	0
	No	100.0%	100.0%	40	40

Section B: This section deals with the Findings related to comparison of post-test knowledge score of student nurses in Experimental and control group.
Table: 2 Findings related to comparison of post-test knowledge scores in experimental and control group among student nurses n1+n2=80.

Categories of knowledge	Experimental Group		Control Group	
	F	%	F	%
Inadequate Knowledge (0-13)	0	0	17	42.5
Moderate Knowledge (14-26)	2	5	23	57.5
Adequate Knowledge (27-40)	38	95	0	0
Total	40	100	40	100

Table 2 shows that, (42.5%) Participants were having inadequate knowledge in control group, (5%) and (57.5%) were having Moderate knowledge in Experimental and control group respectively while as (95%) were having adequate knowledge in Experimental group regarding Oxygen delivery method, which relieves that there is also an increase in post-test knowledge score of Experimental groups.

Table 3: Mean, SD, Standard error & 't' Value of post-test knowledge scores in experimental group and control group. n_1+n_2=80.

Variables	Mean ± SD	Range	't' value	df	P value
Experimental group	33.20±3.383	13	22.758	39	.000***
Control Group	13.20±4.410	17			

***Significant at 0.001 level

The data presented in Table 3 shows that the mean post-test knowledge scores (33.20) of experimental group were higher than the mean post-test knowledge scores (13.20) of control group. This obtained mean difference was found to be statistically significant as evident from the 't' value, df value and p value of post-test knowledge score in Experimental group and Control group and the values are 22.758, 39 and .000 respectively.

Section C: This section deals with the findings related to association of demographic variables with pre-test knowledge scores in Experimental group and control group.

Association of Pre-test knowledge scores with selected demographic variables in Experimental group
- The association between the level of score and socio demographic variable. The Chi-square value shows that there is significance association between the score level and demographic variables i.e. age, residence.
- There is no significance association between the level of scores and other demographic variables i.e. gender, religion, income and type of family. The calculated chi-square values were less than the table value at the 0.05 level of significance.

Association of pre-test knowledge scores with selected demographic variables in control group
- The association between the level of score and socio demographic variable. The Chi-square value shows that there is significance association between the score level and demographic variables i.e. religion.
- There is no significance association between the level of scores and other demographic variables i.e. age, gender, income, residence and type of family.

DISCUSSION

1. To evaluate the effectiveness of video assisted teaching programme by comparing the post-test knowledge scores of student nurses in experimental and control group.
In the present study, Results revealed that that the mean post-test knowledge scores (33.20) of experimental group were higher than the mean post-test knowledge scores (13.20) of control group. This obtained mean difference was found to be statistically significant as evident from the 't' value, df value and p value of post-test knowledge score in Experimental group and Control group and the values are 22.758, 39 and .000 respectively. Findings of the third objective is supported by a study conducted to evaluate the effectiveness of video assisted teaching programme by comparing the post-test knowledge scores of student nurses in experimental and control group.

The findings of the study are congruent extent consistent with the study conducted by Kiran Savaganve et al. with the objective to assess the Effectiveness of video assisted

teaching program on knowledge regarding hyperbaric oxygen therapy among B.Sc. nursing students. Result revealed that revealed that majority (60%) of the students were having average knowledge and 40% of the students were having the poor knowledge regarding HBOT, with the mean score of 14.50 ± 3.564. The findings from post-test represents that majority (68%) were having good knowledge and 32% of the respondents were having the average knowledge regarding HBOT with the mean score of 34.40 ± 2.330. The significant association was found between Gender and post-test knowledge scores (x2 = 3.687 df=1 p< 0.05).[6]

CONCLUSION

Video assisted teaching program on oxygen delivery method in children was highly effective in increasing the knowledge score of student nurses in experimental group regarding oxygen delivery method in children. The mean post-test knowledge scores of experimental group were higher than the mean post-test knowledge scores of control group. The obtained mean difference was found to be statistically significant. In experimental group significant association between the pre-test knowledge score and age, residence and in control group significant association between the pre-test knowledge score and religion of the students

RECOMMENDATIONS
- Further studies can be conducted on large scale to provide better picture of knowledge related to Oxygen delivery method in children.
- There should be in-service workshop and seminar to enhance the student nurses knowledge related to Oxygen delivery method in children.
- Similar study can be replicated using different teaching strategies viz. computer simulation, video films, information booklet, pamphlet etc.
- A comparative study can be conducted on subjects from different college related to Oxygen delivery method in children can be utilized in other area of nursing practice.

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