VOLUME - 11, ISSUE - 05, MAY - 2022 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

Paediatrics

AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF SELF-INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING PREVENTION OF VENTILATOR ASSOCIATED EVENTS AMONG 3RD YEAR GNM NURSING STUDENTS AT SELECTED NURSING INSTITUTES OF THE CITY.

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ABSTRACT

Background: Mechanical Ventilation is a widely used intervention for critically ill patients in intensive care units (ICUs). Ventilator Associated Pneumonia is a potentially preventable complication of mechanical ventilation. Ventilator Associated Pneumonia is the most frequent nosocomial infection reported in mechanically ventilated patients in the intensive care units. **Methods:** An experimental study was done among 3rd year GNM nursing students. Study area was nursing institutes of the city. 60 students were selected for the study by non-probability convenient sampling technique.A pre-test and post-test research design was used, pre-test questionnaire was used to get the relevant information. **Results:** The post-test knowledge score of GNM nursing students was higher than pre-test. It reveals that5(8.33%) of the GNM nursing students had good knowledge ,25(41.67%) of them had very good knowledge score and 30(50%) of them had excellent level of knowledge score.Mean knowledge score in post-test was 23.33±3.09 and mean percentage of knowledge score in post-test was 77.77±10.31. **Conclusions:** The study was concluded that self-instructional module on knowledge regarding prevention of ventilator associated events among 3rd year GNM nursing students in selected nursing institutes of the city was found to be effective as a teaching strategy. Hence, based on the above findings, it was concluded undoubtedly that the educational intervention by the investigator in the form of self-instructional module helped the GNM nursing students to increase knowledge regarding prevention of ventilator associated events.

KEYWORDS : ventilator associated events, GNM students

INTRODUCTION

Being able to breathe is one of the basic essentials for life, and ventilator is the device which helps the patient to access this necessity externally. There are various types and causes of breathing problems which results in patient depending on ventilators for recovery and improvement in their quality of life. The patient in the Intensive Care Unit often requires mechanical assistance to maintain airway patency which is done by inserting a tube into the trachea bypassing the upper airway and laryngeal structure to create an artificial airway.Ventilator-Associated Events (VAEs) is a new term which groups all the conditions that result in a significant and sustained deterioration in oxygenation, defined as a greater than 20% increase in the daily minimum fraction of inspired oxygen or an increase of at least 3 cm H_2O in the daily minimum positive end-expiratory pressure (PEEP) to maintain oxygenation.

OBJECTIVES

1. To assess the pre-test knowledge score regarding prevention of Ventilator Associated Events among 3rd year GNM nursing students at selected nursing institutes of the city.
2. To assess the post-test knowledge score regarding prevention of Ventilator Associated Events among 3rd year GNM nursing students at selected nursing institutes of the city.
3. To evaluate the effectiveness of self-instructional module on knowledge regarding prevention of Ventilator Associated Events among 3rd year GNM students at selected nursing institutes of the city.
4. To associate the knowledge score with selected demographic variables

HYPOTHESIS

Will be tested at 0.05 level of significance

H_0: There is no significant difference between pre test and post test level of knowledge score regarding prevention of ventilator associated events among 3rd year GNM nursing students.

H_1: There is significant difference between pre-test and post-test level of knowledge score regarding prevention of ventilator associated events among 3rd year GNM nursing students.

METHODS

An experimental study was conducted from 4-11-2019 to 23-11-2019. Study area was nursing institutes of the city. Study population includes 3rd year GNM students .sample size and sampling technique consist 60 students were selected for the study by non-probability convenient sampling technique.

DATA COLLECTION

Informed consent was taken from the study participants prior to start the study. A pre-post-test design was used. Pre-test questionnaire was used to get the relevant information it includes variables like Age (in years), Gender, Religion, Area of residence

DATA ANALYSIS

Data entry was done using Microsoft excel. Data was summarized in percentage and proportions. Statistical associations were done using chi square test wherever necessary with $p<0.05$ considered as statistically significant.

RESULTS

Sociodemographic variables

The Table -1 shows that, the majority of the subjects 39 (65%) were belonging to the age group of 19-20 years, 18 (30%) were belonging to the age group of 21-22 years, 2(3.3%) were belonging to the age group of 23-24 years and 1(1.70%) were belonging to the age group of more than 25 years.

Majority 80% of the nursing students were females however 20% of nursing students were males.

Majority 39 (65%) of the students were Hindus, 19 (31.7%) of them were Buddhist, 2(3.3%) of them were Muslim.

Majority 36 (60%) of the GNM nursing students were from

urban, 14(23.3%) of them were from rural and 10 (16.7%) them were from semi urban.

Table 1: Table showing Percentage wise distribution of nursing students according to their demographic characteristics.

n=60

Demographic Variables	No. of nursing students	Percentage (%)
Age (in yrs.)		
19-20 yrs	39	65
21-22 yrs	18	30
23-24 yrs	2	3.3
≥25 yrs	1	1.7
Gender		
Male	12	20
Female	48	80
Religion		
Hindu	39	65
Muslim	2	3.3
Christian	0	0
Buddhist	19	31.7
Others	0	0
Area of residence		
Rural	14	23.3
Urban	36	60
Semi Urban	10	16.7

Table No. II : Table showing comparison of pre-test and post-test level of knowledge score

n=60

Level of knowledge score	Pre-test		Post-test	
Excellent	Frequency(n)	Percentage (%)	Frequency (n)	Percentage (%)
	0	0	30	50
Very good	0	0	25	41.67
Good	15	25	5	8.33
Average	37	61.67	0	0
Poor	8	13.33	0	0

Table no. III Table showing Effectiveness of self-instructional module on knowledge score in pretest and post-test of GNM nursing students regarding prevention of ventilator associated events.

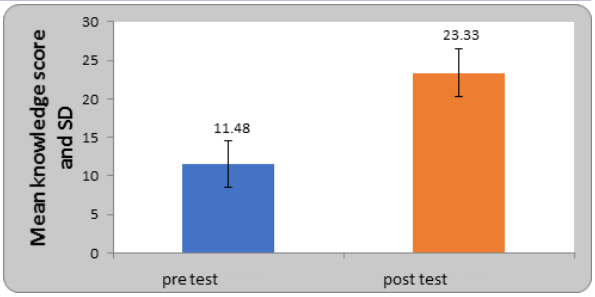
n=60

Test	Mean	SD	Mean Difference	Calculate t-value	df	Table value	p-value
Pre-Test	11.48	3.03	11.85±3.33	27.53	59	2.00	0.0001 S,p<0.05
Post Test	23.33	3.09					

This above table depicts the overall mean pretest and posttest knowledge scores of nursing students from selected nursing institutes of the city which reveals that posttest mean knowledge score was higher 23.33 with SD of ±3.9 when compared with mean pretest knowledge score which was 11.48 with SD of ±3.3.

The statistical Student's paired t test implies that the difference in the pretest and post-test knowledge among nursing students from selected nursing institutes found to be 27.53 which is statistically significant at 0.05% level of significance.

Hence it is statistically interpreted that the Self-Instructional Module on knowledge regarding prevention of ventilator associated events among third year GNM nursing students was effective. Thus, the H_i is accepted.



Bar diagram representing the effectiveness of knowledge score in pre and post-test of GNM nursing students.

ASSOCIATION OF POST TEST KNOWLEDGE REGARDING PREVENTION OF VENTILATOR ASSOCIATED EVENTS AMONG 3RD YEAR GNM STUDENTS WITH SELECTED DEMOGRAPHIC VARIABLES.

The study reveals mean pretest knowledge score 11.48 and the mean posttest knowledge score was 23.33. The calculated value 27.53 is greater than tabulated value 2.00 at 0.05 level of significance. Hence H_1 is accepted. Analysis also reveals that there is association of knowledge score with age (in years), Gender, Religion while none of the other demographic variable were associated with knowledge score.

DISCUSSION

The study was undertaken with the main purpose of assessing the level of knowledge regarding prevention of ventilator associated events among 3rd year GNM students at selected institutes of the city.

In the present study post-test knowledge score of GNM nursing students was higher than pre-test. It shows that post-test 30(50%) of GNM nursing students in posttest had excellent level of knowledge score and 25(41.67%) had very good level of knowledge score. And 5 (8.33%) had good level of knowledge score. The mean and standard deviation SD of the result revels that mean score is 11.48 and SD is 3.03in pretest and mean score is23.33 and SD is 3.09 in post-test.

The finding was compare with a study was conducted by NehaTambe) a study to assess the effectiveness of planned teaching programme on knowledge and practice of staff on ventilator associated events at Mumbai district This was a descriptive survey method conducted among staff nurses about their knowledge and practices related to ventilator associated events. Among 100 staff nurses 58(58%) staff nurses had good knowledge in general assessment of knowledge, which had 3 parts 1. Knowledge related mechanical ventilator where 62(62%) scored average marks. 2. Knowledge related VAE, where 43(43%) scored good marks 3. Knowledge related to prevention of VAE, where, 61(61%) scored good marks .78(78%) scored good marks in self-administered checklist for prevention of VAE. knowledge score was found to be associated with Age, qualifications and experiences in ICU (P<0.05) practice score were found to be associated with age and qualification (p<0.05).

Ms. Mateen Maqbool (2017), have conducted a study aimed to assess the effectiveness of structured teaching programme on knowledge regarding management of critically ill children on mechanical ventilator among staff nurses in selected hospitals of the city. The research design is pre-experimental one group pre-test posttest design. The sample is 50 staff nurses. Post-test was conducted after 7 days. The results of this study in general showed, mean pre-test and post-test knowledge scores were 26.84 and 35.80 respectively. Hence it can be concluded that planned teaching programme was effective in improving knowledge regarding management of critically ill children on mechanical ventilator among staff

nurse which was evident in post-test knowledge score.

In above study the mean post test score 35.80 with standard deviation of 7.63higher than pretest mean score 26.84 with standard deviation of 8.34Similarly in present study, the total mean post-test knowledge score (23.33) was higher than the mean pretest score (11.48). The study also reveals that self-instructional module was effective in improving the knowledge of GNM nursing students regarding prevention of ventilator associated events. There is association of knowledge score with age, Gender, Religion among GNM nursing students.

LIMITATION

The study was conducted only on GNM students
The results cannot be generalized due to small number of samples and restricted time period.
Study is limited to population of only 3 hospitals and one city.
Limited time was available for the study.
In this study to assess the knowledge and practice only.

RECOMMENDATIONS

A similar study can be conducted on large sample.
A comparative study can undertake to assess the knowledge and practices regarding prevention of Ventilator – Associated Events among staff nurses working in Intensive Care Unit.
A study can be conducted to evaluate effectiveness of information booklet on prevention of Ventilator – Associated Events among staff nurses working in Intensive Care Unit.

CONCLUSION

After the detailed analysis, this study leads to the following conclusion:

The GNM 3rd year nursing students have average, good and poor level of knowledge score regarding prevention of ventilator associated events. There was a significant increase in knowledge of GNM students after the introduction of self-instructional module. To find the effectiveness of self-instructional module paired 't' test was applied and post-test score was significantly higher at 0.05 level than that of pretest score.

Thus, it was concluded that self-instructional module on knowledge regarding prevention of ventilator associated events among nursing students at selected institutes of the city was found to be effective as a teaching strategy. Hence, based on the above cited findings, it was concluded undoubtedly that the educational interventions by the investigator in the form of self-instructional module helped the nursing students to increase knowledge regarding prevention of ventilator associated events.

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