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RESEARCH ARTICLE

RESPIRATORY CARE OF INTUBATED PATIENTS

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Abstract

A pre experimental study to assess the effectiveness of planned teaching program regarding respiratory care of intubated patients in terms of knowledge and practice among the ICU staff nurses working in selected hospital at Delhi, NCR. The objective of the study was to assess the effectiveness of Plan Teaching Programme (PTP) on knowledge and practice regarding the respiratory care of intubated patient among ICU staff nurses. This study was conducted on 30 staff nurses of Lady Harding medical college and hospital Delhi NCR. Pre-experimental research design was adopted and purposive sampling technique was used to select the sample. A structured knowledge questionnaire of 25 questions and practice checklist of 30 items were prepared to assess the knowledge and practice of the staff nurses. Data obtained were analyzed and interpreted by using both descriptive and inferential statistics in terms of frequency, percentages, Mean, S.D and Co-relation. Findings showed that In Pre-test Majority of Staff Nurses i.e. 19 (63%) were having V. good knowledge respectively. Whereas in Post Test 17 (57%) were having excellent knowledge regarding care of intubated patient in ICU which indicates an increase in knowledge score. In Pre-test Majority of Staff Nurses i.e. 19 (63%) were having V. good knowledge respectively. Whereas in Post Test 17 (57%) were having excellent knowledge regarding care of intubated patient in ICU which indicates an increase in knowledge score. The mean Post test practice check list score of Staff Nurses is (21.63) which is higher than the mean Pre test practice check list (14.23), with the mean difference of 7.4. The obtained mean difference was found to be statistically significant. The calculated "t" value is 23.81 which is greater than the table value at 0.05 level of significance at df (29). The findings revealed that the coefficient of correlation between post test knowledge score and post test practice score regarding respiratory care of intubated patient in ICU among staff nurses is 0.94 which is statistically significant.

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Introduction:-

Ventilator associated pneumonia (VAP) is defined as the presence of micro organisms in the pulmonary parenchyma leading to the development of an inflammatory response by the host, which may be localized lungs. Incidence of nosocomial infections varies from 3-24% and infection rates vary widely among different intensive care units. The

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critically ill patients in intensive care unit experience a life threatening illnesses like urinary tract infection were associated with urinary catheters (95%), 86% of nosocomial pneumonia was associated with mechanical ventilation and 87% of primary blood stream infections were associated with central lines. Many complications associated with oral endotracheal tubes (ETTs) occur during initial placement. However, ETTs are also associated with complications following placement that can occur during the ensuing days to weeks of intensive care unit (ICU) admission.¹

Problem Statement

“A study to assess the effectiveness of planned teaching programme regarding respiratory care of intubated patients in terms of knowledge and practice among the ICU staff nurses working in selected hospital at Delhi, NCR”

Objectives:-

1. To assess the knowledge regarding respiratory care of intubated patient among ICU staff nurses working in selected hospital.
2. To assess the practice regarding respiratory care of intubated patient among ICU staff nurses working in selected hospital.
3. To evaluate the effectiveness of planned teaching program regarding respiratory care of intubated patients in terms of knowledge and practice
4. To determine the association between knowledge and practice with selected demographic variable.
5. To determine the co-relation between the post test knowledge score and post test practice score regarding respiratory care of intubated patients

Hypothesis

The level of knowledge and practice of staff nurses regarding respiratory care of intubated patients in ICU will have significant association with their personal variables

Methodology:-

Research methodology is a way to systematically solve the research problem. It is a science that deals with various steps that are generally adopted by a researcher in studying research problem along with the topic behind it.

Setting Of The Study

Lady Hardinge Medical College And Hospital New Delhi

Population

Staff nurses working in ICU

Sample Size

30 staff nurses were selected from Lady Harding Medical College and Hospital New Delhi

Sampling Technique:-

Purposive sampling technique was used to collect samples

Sampling Criteria –

Inclusive criteria

1. Staff nurses working in ICU
2. Nurses who were available during the time of data collection.
3. Nurses who were willing to participate.

Exclusive criteria –

1. The staff nurses who were not available at the time of data collection.
2. The nurses who were not willing to participate

Description Of Tool:

1. The investigators used structured knowledge questionnaires and practice check list.
2. The instrument consisted of two sections.

3. **Section A:** Demographic variables of the staff nurses which consisted of seven items such as age, sex, educational status, religion, marital status, previous knowledge, year of experience in ICU. It also consisted of 25 questions related to knowledge regarding respiratory care of intubated patient. The each correct answer carried one score and total score was twenty-five.
4. **Section B:** The following structured Observational checklist has to be filled by the researcher. In process to fill the checklist, the researcher would have to stay in the hospital to have a direct observation on the subjects, while they are involved in the respiratory care of intubated patient and practicing the mentioned criteria of assessment. The researcher observes the subjects on each point of whether they have done the task or not. The response is in the form of YES OR NO. Each YES will be given ONE (1) mark to the task done. The total maximum marks will be 30(THIRTY).
5. **Plan for data analysis:** Based on the objectives of the study, the data was planned to be analyzed by descriptive and inferential statistics. Frequency and percentage were used to show distribution of subjects according to demographic variables. Association between knowledge and selected demographic variables was calculated by Chi-square. The analyzed data will be presented in tables and figures.

Description Of The Study:-

The findings are presented according to the objectives set for the study. The data are organized under the following headings:

1. **SECTION 1** - To compute frequency and percentage distribution is used of demographic data
2. **SECTION 2**- Findings related to frequency and percentage distribution of pre-test and post test knowledge score regarding respiratory care of intubated patient in ICU staff nurses
3. **SECTION 3** - Findings related to effectiveness of planned teaching program pre test knowledge score and mean post test knowledge score regarding respiratory care of intubated patient in ICU staff nurses
4. **SECTION 4** - Findings related to fisher's exact test was used to describe the association between the post-test score of selected demographic variables
5. **SECTION 5** -Findings related to correlation between post test knowledge score and post test practice score regarding respiratory care of intubated patient among staff nurses working in ICU.

Results And Discussion:-

Table 1:- Frequency and percentage distribution of pre-test and post test knowledge score regarding respiratory care of intubated patient in ICU staff nurses N=30.

Grading of Scores	Grading of knowledge	Pre test		Post-test	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1-5	Poor	0	00%	0	00%
6-10	Average	1	3%	0	00%
11-15	Good	6	20%	0	00%
16-20	V. Good	19	63%	13	43%
21-25	Excellent	4	13%	17	57%

Data presented in the table 1 shows that In Pre-test, maximum number of Staff Nurses i.e. 19 (63%) were having Very good knowledge while least number of staff nurses i.e. 1 (3%) were having average knowledge regarding care of intubated patient in ICU. In Post Test, most of the samples i.e. 17 (57%) were having excellent knowledge regarding care of intubated patient in ICU whereas only 13 (43%) were having v good knowledge regarding care of intubated patient in ICU.

A quantitative descriptive, cross-sectional study was conducted to investigate intensive care unit nurses knowledge, practice, attitude and barriers regarding to oral care for intubated patient at West Bank governmental hospitals. This study applied purposive sampling method at governmental critical care units in West Bank. Data were collected by structured questionnaires which consisted of five sections: knowledge, attitudes and practices,

barriers of oral care for intubated patients and demographic information for the nurses. The results of this research showed that there was a lack of Presence of protocol regarding mouth care in Palestinian governmental hospitals. And despite the high qualifications of nurses who are working in critical care units (61.9% BA, and 6.0 MA), the knowledge level for almost half of them (48.8%) was poor. And the practices level of 41.7% of them was acceptable (≥ 58.5 - <76). It was concluded that, nurses should be involved in educational programs related to oral care and evidence-based knowledge and should be encouraged to introduce and utilize written protocols for mouth care in ICU

An other descriptive cross sectional study conducted on Knowledge and Practice of ICU Nurses Regarding Endotracheal Suctioning for Mechanically Ventilated Patients. A total of (n= 142 nurses) were selected by purposive sampling technique. The study findings showed that the majority of nurses working in Khartoum teaching hospital (35.7%) have 2 month - 1year working experience, (85.7%) had poor knowledge level, (76.7%) had fair practice level, and there was no significant relationship between working experience & levels of knowledge & practice. Nurses have better practical level than knowledge level and they were not affected by nurse's length experience as there should be. The study recommended that is need for Practice guidelines and teaching program to be implemented and updated monthly or annually in all hospitals.²

Table 2:- Mean, mean difference, standard deviation and “t” value of knowledge regarding respiratory care of intubated patient in ICU among staff nurses. **N=30**

S.NO	MEAN	MEAN DIFFERENCE	MEDIAN	SD	‘t’ VALUE
Pre test	17.1	4.03	18	3.20	14.31*
Post test	21.13		22	2.24	

H₀₁ – there will be no significant difference between mean pre test knowledge score and mean post test knowledge score regarding respiratory care of intubated patient in ICU staff nurses at 0.05 level of significant.

df(29)= 2.05 at 0.05level of significance

The Data presented in table 2 shows that the mean Post test knowledge score of Staff Nurses is (21.13) which is higher than the mean Pre test knowledge score (17.1), with the mean difference of 4.03. The obtained mean difference was found to be statistically significant. The calculated “t” value is 14.31 which is greater than the table value at 0.05 level of significance at df (29). Hence, it is concluded that the planned teaching program was effective in increasing the knowledge regarding respiratory care of intubated patient in ICU among Staff Nurse's. Therefore, null hypothesis (H₀) was rejected, and research hypothesis (H₁) was accepted.

Chithra (2017) conducted a pre experimental study to assess the effect of Structured Teaching Program on Knowledge Regarding Prevention of Ventilator Associated Pneumonia among Critical Care Nurses. One group pretest and posttest design was adopted. Convenient sampling technique was used to select samples. The sample consists of 300 critical care nurses. The self-administered questionnaire was used to collect data. The findings of the study revealed that there was a marked increase in the overall knowledge score of post-test than pre-test score which represents the effectiveness of structured teaching program. The calculated t test value was found to be 5.934 which are highly significant at 0.01. Thus the structured teaching program was effective in improving the knowledge of critical care nurses regarding prevention of ventilator associated pneumonia. On the basis of findings the investigator concluded that the STP has improved the knowledge of critical care nurses regarding prevention of ventilator associated pneumonia.⁴

Table 3:- Frequency and percentage distribution of mean pre-test and mean post test practice score regarding respiratory care of intubated patient in ICU staff nurses N=30

Grading of Scores	Grading of knowledge	Pre test		Post-test	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)

1-6	Poor	0	00%	0	0%
7-12	Average	12	40%	0	00%
13-18	Good	15	50%	8	27%
19-24	V. Good	3	10%	11	37%
25-30	Excellent	0	00%	11	37%

Data presented in the table 3 shows that In Pre-test practice Scores, maximum number of Staff Nurses i.e. 15 (50%) were having good practice whereas least number i.e. 3 (10%) were having v. good practice regarding care of intubated patient in ICU. Whereas in post-test practice scores, maximum number of staff nurses i.e. 11 (37%) were having excellent and v. good practice regarding care of intubated patient in ICU and least number of staff nurses i.e. 8 (27%). Hence, the teaching Program was effective in improving the practice regarding care of intubated patient in ICU among Staff Nurse

Table 4:- Mean, mean difference, standard deviation and “t” value of practice regarding respiratory care of intubated patient in ICU among staff nurses N=30

S.NO	MEAN	MEAN DIFFERENCE	MEDIAN	SD	‘t’ VALUE
Pre test	14.23	7.4	15	2.99	23.81*
Post test	21.63		22	3.94	

H₀₂. there will be no significant difference between mean pre test practice score and mean post test practice score regarding respiratory care of intubated patient in ICU staff nurses at 0.05 level of significant.

df(29)= 2.05 at 0.05 level of significance

The Data presented in table 4 shows that The mean Post test practice score of Staff Nurses is (21.63) which is higher than the mean Pre test practice (14.23), with the mean difference of 7.4. The obtained mean difference was found to be statistically significant. The calculated “t” value is 23.81 which are greater than the table value at 0.05 level of significance at df (29). Hence, it is concluded that the structured teaching program was effective in increasing the practice regarding respiratory care of intubated patient in ICU among Staff Nurse’s. Therefore, null hypothesis was rejected, and research hypothesis was accepted.

ThomasM (2012) conducted a Quasi experimental study to assess the effectiveness of a structured teaching program on knowledge regarding infection control in hospital among nursing students in selected nursing colleges, Bangalore the Structured Knowledge Questionnaire on infection control was developed to collect the data. (N=90) samples were selected by using simple random sampling technique The pretest was conducted on 28.10.2011 followed by the X administration of a structured teaching program on infection control was undertaken. The posttest for the group was conducted on the 7th day by the investigator. The findings of the study show the pretest mean score of 21.11, while the posttest score was 35.47. It was noted that there is a significant difference with a (paired) ‘t’ value of 23.413 at (p<0.001) levels. The finding of the present study reveals a significant gain in knowledge among nursing students following the structured teaching program on infection control. Structured teaching program can be used effectively to improve the knowledge regarding infection control among the nursing students from their first year of studies. This in turn can improve their skill in preventing hospital acquired infection, while caring for the patients.³

Table 5:- Coefficient of correlation between knowledge post tests score and practice post test score regarding respiratory care of intubated patient N=30

VARIABLES	MEAN	SD	r
Post Test Knowledge Scores	21.13	2.24	0.94
Post Test Practice Score	21.63	3.94	

H₀₅. There will be no significant coefficient of correlation between knowledge post tests score and post test practice score regarding respiratory care of intubated patient in ICU among staff nurses after the administration of planned teaching program as measured by a structured knowledge questionnaire and practice at 0.05 level of significance

The data shows evident that coefficient of correlation between knowledge post tests score and practice post test score regarding respiratory care of intubated patient was ($r = 0.94$). Hence there is a moderate positive relationship between the post test knowledge score and post test practice score of ICU staff nurse's at 0.05 level of significance. Thus, the null hypothesis (H_0) was rejected, research hypothesis was accepted.

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