RESEARCH ARTICLE

EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE RELATED TO PRACTICES AMONG STAFF NURSES REGARDING NURSING MANAGEMENT OF PATIENT ON MECHANICAL VENTILATOR

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ABSTRACT

INTRODUCTION: Respiration is vital for the survival and proper functioning of the human body. Breathing requires the movement of air into and out of the lungs. Variety of critical conditions can impair the ability of theses muscles to accomplish this task due to damage to the respiratory centre demands artificial support in the form of Mechanical ventilation i.e. advance life support treatment. Mechanical ventilation is an advanced life support which requires sophisticated instruments and highly skilled nurses for the care of patients on ventilatory support.

AIM : Aim of the study to assess the effectiveness of structured teaching programme on knowledge of staff nurses related to practices in providing nursing care to the patient on mechanical ventilator.

MATERIAL AND METHODS: The data collected by using tool consisting of socio-demographic variables, self structured knowledge questionnaire which was administered to purposively selected 50 staff nurses working in Adesh group of hospitals at Sri Muktsar Sahib and Bathinda, Punjab.

RESULTS: The results shown that out of 50 subject's majority 40 (80%) had average knowledge scores followed 6 (12%) had good and remaining 4 (8%) had poor knowledge in pre-test. On the other hand, majority 29 (58%) had good knowledge scores followed by 17 (34%) had excellent and remaining 4 (8%) with average knowledge scores in the post-test. It reveals that the administration of structured teaching programme had significant improved their knowledge scores.

CONCLUSION: The study findings showed statistically highly significant difference between pre test and post test at $p<0.001$ level after the administration of structured teaching programme. The study concluded that the structured teaching programme was effective in improving the knowledge related to practices about the nursing management of patient on mechanical ventilator.

KEYWORDS: Effectiveness, staff nurses, structured teaching programme, knowledge

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INTRODUCTION & BACKGROUND OF THE STUDY

Respiration is vital for the survival and proper functioning of the human body. Breathing requires the movement of air into (inspiration) and out of the lungs (expiration). It is only one process that delivers oxygen to where it is needed in the body and removes carbon dioxide. This is normally accomplished by the diaphragm and chest muscles under the control of respiratory centre of brain. But variety of medical conditions can impair the ability of theses muscles to accomplish this task like damage to the respiratory centre e.g. Head injury, severe chest infections, poisoning, motor neuron disease, poliomyletis, myopathies affecting the respiratory muscles, postoperative respiratory failure, coma and pulmonary embolism[1]. Patient whose respiratory system is compromised is brought to the hospital, she/he is ventilated artificially. This is called mechanical ventilation. Mechanical ventilation is a life support treatment. A mechanical ventilator is a machine that helps people breathe when they are not able to breathe enough on their own.[2]

Patients requiring mechanical ventilation are often weak, debilitated and immune compromised. Infection such as nosocomial pneumonia is common and contributes about 15% of all hospital acquired infections further compromised the patient condition. Ventilator associated pneumonia incidence is approximately 9%-70% and increased ICU stay by several days. Results on attributable mortality with VAP were 13%-55% (centre for disease control and prevention, 2003). It is important that meticulous attention be given to hand washing, gloving and other procedures. So that the risk of infection is minimized by preventing cross contamination.[3]

Mechanical ventilation is an advanced life support which requires sophisticated instruments and highly skilled nurses for the care of patients on ventilatory support. The first and important nursing responsibility of intensive care nurse is to ensure patent airway.[4] The nurse should be highly skilled in assessing the patient's problems related to ventilation and complications as a result of critical illness. The nursing management of mechanical ventilation patient is challenging on many levels from the acquisition of highly technical skills, expert knowledge on invasive monitoring and implementation of interventions to care for the practice. Care of the mechanically ventilated patient is a liability of the critical care nurses.[5] These patients are critically ill and their well-being, their lives, depend on how swiftly and appropriately the nurses respond to their needs. Patient on ventilator is experiencing life threatening situation, as a nurse's we have moral responsibility to improve the patient respiratory status and protect him against potential complications. It is essential that those involved in the care of mechanically ventilated patient, understand the reason for mechanically ventilation and have a sound working knowledge of its use.[6] Nurses must have adequate knowledge regarding "what is mechanical ventilation .The reason for mechanical ventilation, ventilator parameter modes, potential and process of weaning for patient from ventilator[4]. Meticulous nursing care of patient on mechanical ventilation is essential to optimize patient outcome and to prevent complications. An amalgamation of clinical judgment, caring practices, clinical inquiry and acting facilities of learning experience and of learning competencies that are essential for care of patient on mechanical ventilation are required to be mastered by ICU nurses.[5]

OBJECTIVES OF THE STUDY

1. To assess the effectiveness of structured teaching programme in terms of knowledge scores of staff nurses related to practices in providing nursing care to the patient on mechanical ventilator.
2. To assess the relationship between the levels of gained knowledge scores related to practice of staff nurse with selected sociodemograhic variables.

Research Hypothesis (H_1) -There will be a statistically significant difference between the pretest and the post-test knowledge scores of staff nurses related to practices in providing nursing care to the patient on mechanical ventilator.

Null Hypothesis (H_0) - There will be no statistical significant association between posttest knowledge scores among staff nurses and relation to their clinical experience (years).

MATERIAL AND METHODS

Research design & setting: The research approach adopted for the study was quasi-experimental approach with one group pre test & post test design. The study was conducted at Adesh group of Hospitals, Sri Muktsar Sahib and Bathinda, Punjab.

Sample & Sampling Technique: Samples were selected by purposive sampling technique and the sample comprised of 50 staff nurses.

Description of Tools: Data was collected by a self structured multiple choice questionnaire. The questionnaire consisted of two parts. Part A was about demographic variables of the study subjects. Part B contained 40 questions to assess their knowledge related to practices of staff nurses regarding nursing management of patient on mechanical ventilator. Reliability of the structured multiple choice questionnaire was .80 computed by split half method and by Karl Pearson's coefficient of co-relation.

Data Collection Procedure: The procedure of the data collection was carried out in the month of January, 2011. The total group sample consists of 50 subjects/staff nurses working at Adesh group of hospitals Sri Muktsar sahib & Bathinda .Pre test was taken from the group and thereafter structured teaching programme was given to the study subjects. The investigator spent 45 minutes to complete the teaching. Post test was taken on the seven days from the same study subjects.

ETHICAL CONSIDERATIONS

Ethical approval was taken from Institutional ethical committee to conduct the study. Apart from this, written informed consent was taken from each study subject and permission was sought from authorities of the Adesh group of hospitals Sri Muktsar sahib & Bathinda to collect the data. Confidentiality & privacy of the study subjects was also taken care of.

RESULTS

Table 1

Comparison of means of pretest and posttest knowledge scores of staff nurses regarding nursing management of patient on mechanical ventilator.

Knowledge scores **N=50**

n		pretest	posttest	t-value	P
50	Mean	20.76	30.74	28.474***	P<0.001
	SD	3.444	3.741		

*NS= Non significant

*** Significant at 0.1% level

Table 1 depict the comparison between the means of pretest mean knowledge score (20.76±3.444) and posttest knowledge scores (30.74±3.741) among 50 subjects showed that there was statistical highly significant ($p < 0.001$) increase in their posttest knowledge scores compared to the pretest knowledge scores of staff nurses regarding nursing management of patient on mechanical ventilator which established the effectiveness of structured teaching program. Hence, H_1 hypothesis stands accepted.

Table 2

Frequency and percentage distribution of subjects according to their pretest and posttest level of knowledge scores.

N=50

Levels of knowledge scores	Range	Pretest		Posttest	
		n	(%)	n	(%)
Very poor	0-8	00	00	00	00
Poor	9-16	04	08	00	00
Average	17-24	40	80	04	08
Good	25-32	06	12	29	58
Excellent	33-40	00	00	17	34

Maximum score =40 **Minimum score =0**

Table 2 delineate that out of 50 subject's majority 40(80%) had average knowledge scores followed 6(12%) had good and remaining 4(8%) had poor knowledge in pre-test. On the other hand, majority 29(58%) had good knowledge scores followed by 17(34%) had excellent and remaining 4(8%) with average knowledge scores in the post-test. It reveals that the administration of structured teaching programme had significant improved their knowledge scores level.

Table 3

Relationship of posttest knowledge scores of staff nurses with their selected sociodemograhic variables.

N=50

Sociodemograhic variables	Posttest knowledge score					χ^2
	Excellent	Good	Average	Poor	Very Poor	
Age(years)						
Upto20	00	00	00	00	00	
20-25	10	20	04	00	00	1.3428*
25-30	06	08	00	00	00	
30-35	01	01	00	00	00	
>35	00	00	00	00	00	
Professional Experience(years)						
Upto-1	00	00	00	00	00	
1-5	12	23	04	00	00	
5-10	04	05	00	00	00	0.844*
10-15	01	01	00	00	00	
>15	00	00	00	00	00	
Area of clinical posting						
ICU	06	07	00	00	00	
Cancer ward	02	03	00	00	00	
Special ward	03	04	00	00	00	
Emergency ward	02	06	00	00	00	0.7827*
Operation theatre	00	03	00	00	00	

Surgical ward	03	03	00	00	00	
Labour ward	01	00	00	00	00	
Deaddiction ward	00	03	00	00	00	
Duration of current clinical experience(years)						
0-1	07	13	02	00	00	3.152*
1-4	08	14	02	00	00	
4-8	02	02	00	00	00	
>8	00	00	00	00	00	

***NS-Not Significant(p>0.05)**

****S-Significant(p<0.05)**

The data in table 3 depicted that the computed chi-square values between the posttest knowledge scores and the selected variables showed that there was no statistical significant relationship(p>0.05) with the posttest knowledge scores of staff nurses with their selected variables like age, gender, professional qualification, and professional experience area of clinical posting and duration of current clinical experience.

DISCUSSION

Present study has assessed the knowledge related to practices of staff nurses regarding nursing management of patients on mechanical ventilator after providing structured teaching programme. Patients on mechanical ventilators are at higher risk of developing many comorbid ailments due to the negligence on the part of nursing staff which ultimately leads to increase in hospitalization cost as well as enhancement in mortality rate of patients.[8] A patient on mechanical ventilator suffers from disequilibrium in health in terms of physical, physiological, psychological and social isolation parameters. It could be due to lack of awareness of about the maintenance of critical components among staff nurses those has devastating effect on patient health and unavailability of continuing inservice education so that they are enriched with the recent advancements in rendering nursing services to patient and coping strategies among patients for patient better outcome. These findings emphasize the need of assessing their knowledge to update their knowledge by providing special classes on nursing aspects. It also highlights the need of empowering nurses through proper training and counseling about handling these patients.[9]

They should also be encouraged for active participation in research projects to improve the pattern of nursing care with limited cost. A structured teaching programme was beneficial for staff nurse's bout different aspects of patients on mechanical ventilation. It consists of ventilation types and its minute's software parameters and nursing care various aspects in detail which were not usually practiced by staff. It was validated by experts from critical care units and nursing.[10]

The information material was to staff was found acceptable and it was observed that they were utilizing important aspects while providing nursing care to the ventilated patients. It was found that staff nurses who attended the structured teaching programmed had significantly better knowledge scores related to nursing management of patient on mechanical ventilation. It is reported that the delay in identification of early complications leads to poor quality of life and outcome of patients on advance life support devices.

CONCLUSION

The study concluded that the structured teaching programme was effective in improving the knowledge related to practices about the nursing management of patient on mechanical ventilator. Nursing personnel are the cornerstone of health care system and have major role in providing services and as well as nursing supervisors have significant role in improving their staff knowledge about recent advancement in nursing care by delivering special teaching programme to cadre which facilitate better training and active participation empower them for better patient management services.

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