International Journal of Applied Research 2017; 3(5): 586-588

ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2017; 3(5): 586-588
www.allresearchjournal.com
Received: 13-03-2017
Accepted: 14-04-2017

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Effect of planned teaching programme on knowledge regarding care of patients on mechanical ventilator among staff nurses

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Abstract
The current study aimed to assess the effect of planned teaching programme on knowledge regarding care of patients on mechanical ventilator among staff nurses working in paediatric critical care units of selected hospitals in Pune city. To assess the knowledge regarding care of patients on Mechanical Ventilator among staff nurses working in Paediatric critical care units before planned teaching programme. To assess the knowledge regarding care of patients on Mechanical Ventilator among staff nurses working in Paediatric Critical Care Units after planned teaching programme. To assess the effectiveness of planned teaching programme on knowledge regarding care of patients on Mechanical Ventilator among staff nurses working in Paediatric Critical Care Units before and after planned teaching programme. To associate the knowledge scores regarding care of patients on Mechanical Ventilator among staff nurses working in Paediatric Critical Care Unit with the selected demographic variables. A quantitative research approach using Pre - experimental – one group pre test-post test design was adapted for the study. A study was carried out with 60 staff nurses working in Paediatric Critical Care Unit (PICU & NICU) of selected hospitals. Demographic performa, structured knowledge questionnaire were used to collect the data. The study observed that the mean posttest knowledge score (16.7) was significantly higher than the mean pretest score (13.5) where the 't' value (59) was 9.7 at p-value was 0.001.The study conclude that planned teaching was found effective in increasing knowledge of staff nurses regarding care of patients on mechanical ventilator.

Keywords: Assess, Effect, planned teaching programme, Knowledge, Patients, Mechanical ventilation, Staff nurse, Paediatric critical care unit, Hospital

1. Introduction
Critical care is a challenging role for all health care providers. A Paediatric Intensive Care Unit and Neonatal Intensive Care Unit nurses play a crucial role in implementation of quality critical care to sick children. Perhaps the most difficult part in this nursing, care is provided and maintaining a fine balance between technological interventions, individual child's needs and family involvement [1]. A mechanical ventilator is a positive or negative pressure breathing device that can maintain ventilation and oxygen delivery for a prolonged period [2]. Care of the patients on mechanical ventilator is very important and intensive care unit nurse should be trained in handling ventilated patients. Therefore, it is essential that the nursing staff apply knowledge in order to provide effective care to the patients. As a staff nurse, it is essential to know about knowledge regarding various aspects like airway management, positioning, nutritional therapy, medication, communication, weaning of the patient and prevention of complication about care of patient on mechanical ventilator is more necessary of providing safe nursing care [3]. While working in Paediatric Critical Care Unit as a staff nurse, it was felt that even though nurses have knowledge regarding taking care of children on Ventilator, an upgraded and ongoing input on knowledge will improve care given to the further. So researcher felt the need to conduct this study which will yield to better patient care.

2. Methodology
A quantitative approach with pre- experimental -one group pretest -posttest design was adapted. The study was conducted in selected Critical Care Unit (NICU&PICU) of Hospitals of Pune city. 60 staff nurses were selected by using purposive sampling techniques.

The data were collected using demographic Performa, Structured knowledge questionnaire on knowledge of staff nurses regarding care of patient on mechanical ventilator. On day one, a pretest and planned teaching programme regarding care of patient on mechanical ventilator was given. After 7 days, post-test was done. Demographic Performa consisting of 6 items: age, gender, professional qualification, years of experience as a critical care nurse, year of experience in general/other ward, Have you undergone any training/courses for neonatal/pediatric nursing? (Yes/no)

Semi structured knowledge questionnaire consisting of 24 items covering the following 6 areas: it includes definition, purposes, indication, mode of ventilator, nursing care in PICU & NICU. Content validity of the tools was established by the suggestion of 19 experts. Tool was found to be reliable by using Karl Pearson correlation coefficient formula (r=0.877). Ethical consideration: Formal administrative approval was obtained from the Medical Superintendent and Head of Department of PICU & NICU of selected hospital of Pune city. Written Consent was taken from the participants.

3. Results

Table 1: n=60

Knowledge	Pretest		Posttest	
	Freq	%	Freq	%
Poor (Score 0-8)	1	1.7%	1	1.7%
Average (Score 9-16)	52	86.7%	22	36.7%
Good (Score 17-24)	7	11.7%	37	61.7%

The data in table no.1 reveals that In pretest, majority of 86.7% of the staff nurses had average knowledge, 11.7% of them had good knowledge and 1.7% of them had poor knowledge whereas in posttest, majority of 61.7% of the staff nurses had good knowledge, 36.7% of them had average knowledge and 1.7% of them had poor knowledge regarding care of patients on Mechanical Ventilator. This indicates that there is remarkable improvement in the knowledge of the staff nurses working in Paediatric Critical Care Units after planned teaching programme

Table 2: n=60

Knowledge	Mean	SD	t	Df	p-value
Pretest	13.5	2.5	9.7	59	0.000
Posttest	16.7	2.1			

Data in table 2 indicates that Paired t-test for comparison of pretest and posttest knowledge scores of the staff nurses. Average pretest knowledge score was 13.5 which increased to 16.5 in posttest. T-value for this comparison was 9.7 with 59 degrees of freedom. Corresponding p-value was 0.000, which is small (less than 0.05), the null hypothesis is rejected. Planned teaching programme is proved to be significantly effective in improving the knowledge of the staff nurses working in Paediatric critical care units regarding care of patients on mechanical ventilator.

There was no significant association with any demographic variable with knowledge of staff nurses working in Paediatric Critical Care Unit regarding care of patients on Mechanical Ventilator.

4. Discussion

The results of the present study reveals that majority of 86.7% of the staff nurses had average knowledge in pretest whereas in post-test, majority of 61.7% of the staff nurses had good knowledge regarding care of patients on Mechanical Ventilator. A study conducted by Shakti B Miahra, *et al*, on A study to evaluate the effectiveness of planned teaching programe for intensive care unit staff nurses-an Indian experience. In pretest 53.40% had average knowledge Whereas in Posttest, 77.20% of the total score was obtained for ventilator-associated complications. Regular training programs can be effective in improving the knowledge of nursing staff [4]

In present study, the demographic variables were found to have no significant association with knowledge staff nurses working in Paediatric Critical Care Unit regarding care of patients on Mechanical Ventilator. A study was conducted by faculty of Department of Medical Surgical Nursing, Yenepoya College of Nursing, Mangalore, on Effectiveness of Structured Teaching Programme on Knowledge regarding modes of Mechanical Ventilator among Staff Nurses at a selected Hospital. It was observed that there was no significant association found at 0.05 levels between the knowledge of nurses with their selected demographic variables [5].

5. Conclusion

The conclusion drawn from the findings of the study are as follows:

Majority of the staff nurses had average knowledge before planned teaching programme whereas majority of staff nurses had good knowledge after planned teaching programme regarding care of patients on mechanical ventilator. Statistical findings show that Planned teaching programme was found to be effective in increasing the knowledge of staff nurses regarding care of patients on mechanical ventilator.

6. Recommendation

The same study could be replicated on a large sample for generalization of the study. A similar study can be replicated in different settings to strengthen the findings. A study can be conducted to find out the effect of planned teaching programme on staff nurses regarding care of patients on mechanical ventilator in other wards, recovery room i.e post operative room and Operation Theater. A similar study can be conducted on nursing students regarding care of patients on mechanical ventilator. A descriptive study can be conducted on same study.

7. Acknowledgement

We express our appreciations to the respected officials of the Bharati Vidyapeeth Deemed University, College of Nursing, Pune for Cooperating with us for executing this research. The author would like to thanks Mrs Veena. S and Mr. Renie Raju for their constant encouragement, detailed and constructive comments. The authors thank all the staff nurses that participated in this study

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