

Asses the Knowledge of Staff Nurses regarding Knowledge of Mechanical Ventilator

Husain K. Nadaf, Omkar Savairam, Kranti Patil, Sanket Patil, Vaibhav Patil, Shraddha Sarnaik, Karan Redekar, Nilesh Patil, Pratiksha Powar

Abstract: *Objective:* To assess the knowledge regarding Mechanical Ventilator among staff nurses. To find out an association between knowledge scores of Mechanical Ventilator and its selected socio - demographic variables. Mechanical ventilation is an important nursing skill and is essential in the management of patients with respiratory and cardiac arrests. Appropriate skills are required to deliver prompt and correct treatment. In emergencies, the nurse is expected to interpret the need of mechanical ventilation accurately and respond immediately. Lack of these limits treatment and affects clinical outcomes. Hence, the study was aimed to determine the knowledge and to find out an association between knowledge scores with selected socio - demographic variables. *Materials and methods:* Descriptive study was performed on 100 staff nurses working in medical, surgical, and cardiac intensive care units of selected hospitals at Kolhapur. . Improvement in knowledge score was determined through the evaluative survey approach. *Results:* The calculated paired' value ($t_{ab} = 7.38$) was greater than tabulated value ($t_{ab} = 2.02$). Hence H_1 is accepted. This indicates that the gain in knowledge score is statistically significant at $P < 0.05$ level. i. e. $H_1: \mu \neq \mu_0$. In present study, there was significant association between knowledge scores and selected socio - demographic variable like gender ($t_{cal} 26.86$ & $t_{ab} 4.30$), area of work ($t_{cal} 05$ & $t_{ab} 2.45$) and staff nurses attended the in service education ($t_{cal} 60$ & $t_{ab} 2.78$). Therefore the calculated Chi - square values was higher than tabulated value at $P < 0.05$ level of significance. *Conclusion:* The present study revealed that majority of staff nurses had average knowledge on mechanical ventilator.

Keywords: mechanical ventilator, descriptive, emergencies, intensive care units, staff nurses

1. Introduction

Mechanical ventilation, assisted ventilation or intermittent mandatory ventilation (IMV), is the medical term for ventilation where mechanical means are used to assist or replace spontaneous breathing. [1] This may involve a machine called a ventilator, Mechanical ventilation is termed "invasive" if it involves any instrument inside the trachea through the mouth, such as an endotracheal tube or the skin, such as a tracheostomy tube. [2] Face or nasal masks are used for non - invasive ventilation in appropriately selected conscious patients The two main types of mechanical ventilation include *positive pressure ventilation* where air (or another gas mix) is pushed into the lungs through the airways, and *negative pressure ventilation* where air is usually, in essence, sucked into the lungs by stimulating movement of the chest a part from these two main types, there are many specific modes of mechanical ventilation, and their nomenclature has been revised over the decades as the technology has continually developed.

2. Materials and methods

A Descriptive study was performed during September – October 2021 on 100 staff nurses working in medical, surgical, and cardiac intensive care units of selected hospitals at Kolhapur. Participants of both gender, present at the time of data collection and willing to participate in the study were included. Those who were absent at the time of data collection were excluded. The study was performed after the clearance of the institutional ethical committee (535/ SPON/2021) and local authorities. The structured knowledge questionnaire (tool) on mechanical ventilator was designed after extensive literature reviews and expert discussion. [10] the tool and arbitrarily grading the response as: good knowledge (23 - 33), average knowledge (12 - 22) and

poor knowledge (0 - 11) based on correct answers. The time allotted to respond for each set up was 30 minutes.

A chi - square test was used to find an association between test scores and socio-demographic variables. $P < 0.05$ was considered as statistically significant.

Table 2: Frequency Distribution of Socio - Demographic Variables

Socio - demographic Variable	Frequency (%)
<i>Age (years)</i>	
21 - 25	51 (51)
26 - 30	23 (23)
31 - 35	26 (26)
<i>Gender</i>	
Male	57 (57)
Female	43 (43)
<i>Education</i>	
GNM	46 (46)
Basic B. Sc. nursing	45 (45)
Post Basic B. Sc. nursing	09 (09)
<i>Experience (Months)</i>	
0 - 2	40 (40)
2 - 4	40 (40)
4 - 6	20 (20)
<i>Area of Work</i>	
Causality	10 (10)
CICU	35 (35)
MICU	20 (20)
SICU	35 (35)
<i>Present Working Area</i>	
Causality	47 (47)
CICU	40 (40)
ICU	13 (13)

GNM - general nursing and midwifery, B. sc. - Bachelor of Science, CICU - cardiac intensive care unit, MICU - medical intensive care unit, SICU - surgical intensive care unit, ICU

- intensive care unit, % - percentage the scores, 77% of the participants had average knowledge score (n=46) whereas 40% had good knowledge score (n=3) and 14% had poor knowledge scores (n=8). Knowledge scores was observed (Figure 1).

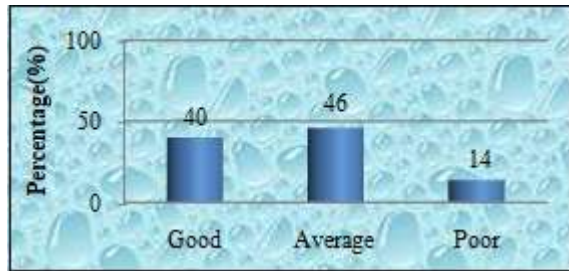


Figure 1: Distribution of scores

3. Discussion

The present study is the first of its kind in Kolhapur. It aimed to determine the knowledge regarding mechanical ventilator among staff nurses in Kolhapur and to evaluate correlation between socio - demographical variables of the subjects and their scores.

A significant improvement was observed; A significant association between gender and experience scores was seen. The limitation of the study was the small sample size. Generalization could be better if the large sample size is used, also an experimental study including control and experimental group with various other interventional modalities are the further recommendation of the study.

4. Conclusion

The staff nurses working in critical areas are having average knowledge regarding mechanical ventilation

5. Ethical Approval

Ethical approval for this study was obtained from Institutional Ethics Committee, Savitribai Phule College of Nursing, Kolhapur (535/SPCON/2021).

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Conflict of interest

None to declare

Authors Contribution

Study conception and design: Husain K. Nadaf

Data collection: Husain K. Nadaf, Mr. Omkar Savairam, Ms. KrantiPatil, Mr. SanketpatilMr. VaibhavPatil, Ms. Shradha Sarnaik, Mr. Karan Redekar, Mr. Nilesh Patil, Ms. Pratiksha Powar

Data analysis and interpretation: Husain K. Nadaf

Drafting of the article: Husain K. Nadaf

Critical revision of the article: Husain K. Nadaf

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