



Nurses' Knowledge and Practice Regarding Nursing Care of Patient on Mechanical Ventilation in Bahri Teaching Hospital- 2019- Sudan

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Abstract

Review Article

Background: Mechanical ventilation term for artificial ventilation where mechanical means is used to assist or replace spontaneous breathing. **Design & Methods:** This was descriptive study aimed at assessing mechanical ventilator among nurse's bachelor qualified nurses in intensive care unit of bahri teaching hospital during period from March to May 2017. The sample size consisted of (30) nurses, data collected by using questionnaire design for the purpose of the study and check list. The data analyzed using statistical package for social science (SPSS). The result showed that (90%) of study sample their age group between (21-35), knowledge of mechanical ventilation it found that (73%, 66%, 76%). Regarding nursing intervention of patient mechanical ventilator, it was found that (63%, 73%) nursing care. **Conclusion:** The study concluded nurses' knowledge and practice are varies from excellent to poor.

Keywords: Nurses- Knowledge- practice- care- Mechanical ventilation.

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INTRODUCTION BACKGROUND

Mechanical ventilation is the medical term for artificial ventilation where mechanical means is the used to assist or replace spontaneous breathing. There are two main modes of mechanical ventilation with two division's positive pressure ventilation, where air (or other gas mix) is pushed into trachea. And negative pressure ventilation (where air sucked into the lungs). Indication of mechanical ventilator is the patient spontaneous ventilation is inadequate to sustain life. In addition, it's indicated as a measure to control ventilation in critically ill patients and as prophylaxis for impending collapse of other physiological function. Indicated includes respiratory or mechanical insufficiency and ineffective gas exchange. Complication can occur at any stage of mechanical ventilator and are some times life threaten includes lung injury is associated with over distention of the alveoli. General nursing care, oral secretion co migrate down the air way and believed to be an important causes of pneumonia, provide regular oral care with an

antibacterial solution and to suction the pharynx, proper resuscitation, and check the ventilator setting . Included 18,302 patients. The reasons for initiating mechanical ventilation varied significantly among charts. Ventilator management changed over time ($P>0,00$), with increase used of non invasive positive pressure ventilation(5% in 1998 To 14% in 2010), Crude mortality in the intensive care unit decrease in 2010 compared with 1998 despite a similar complication rate. Hospital mortality decrease similiary. After adjusting for based line and management variables, this difference remained significant Mechanical ventilation use in the united states. Few contemporary population. Based data exist about the incidenc, patient characteristics, and out comes of mechanical ventilation in acute care hospital. Of 6,469,674 hospitalization in the six states. 180,326(2,8%) receive invasive mechanical ventilator. There was wide age distribution with 52,2% of patient<65years of age total of 44,6% had at least one major comorid condition. The most common comorbidities included diabetes (13,20%) and pulmonary disease (13,2%) in hospital mortality

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was(34,5%) and only 30,8% of patient were discharged home from the hospital. Projecting to national estimates, there were 790,257 hospitalization involving mechanical ventilator in 2005. Of 1,759 citation, 43 studies from 15 low income countries met individual ICU in 31 cities of which 16 had population greater than 500,000, and 14 were capital cities. The median annual KU admission rate was 40, ratio of adult and pediatric ICU beds to hospital beds was 1,5%0 Nepal and Uganda the only countries with national ICU bed data, had 16,7 and 1,0 ICU beds per million population, respectively. National data from other countries were not available ventilation in south Africa the retrospective audit indentified 260 adverse events in 61 patient (50,8 per 100 patients day Ninteen patients (24%) did not have any adverse events. Catheter complications, hypoglycemia and endotracheal tube male positioning requiring reposition during 58 ward rounds revealed 272 adverse events in 236 patients (27,2 per 100 patient days) hundred thirty-two patients of the total 236 patients (56% did not experience an adverse event. 60% of mechanical ventilation patient intensive care unit acquired ventilator associated pneumonia, so this study aim at finding the ongoing nursing care give to these patients with mechanical ventilator.

Justification

Choice this study to identify the suggested nursing knowledge and practice of patient on mechanical ventilator. The patient with mechanical ventilator specifically need more attention and special care of high qualified manner without complication.

Objective

General objective: To assess nurses knowledge and practice regarding nursing care of patient on mechanical ventilator.

Specific Objective

- To identify nurses knowledge of patient on mechanical ventilator.
- To evaluate nursing practice of patient on mechanical ventilator.

Study Design

This is descriptive cross-sectional hospital based study. Was conducted to assess knowledge, attitude and practice of nurses regarding care of patient on mechanical ventilator in intensive care unit (ICU) at bahri teaching hospital, conducted from march to may 2017.

Study Area

This study carried out in Khartoum state, bahri locality. Bahri teaching hospital is governmental state hospital build in 1950. The hospital located in Khartoum north and surround area and from all country, along of it includes medical, surgical, emergency department, obstetric, gynecological department

department, ENT, dermatology department, ophthalmological department, orthopedic, blood bank, dental department, intensive care unit and nursery unit, X-Ray, laboratory, physiotherapy, pharmacy, endoscopy of GIT, ultrasound unit, and vaccination and nutrition department.

Study population: Qualified nurses who graduated from universities and hold diploma, Bachelor and PHD degree of working in bahri teaching hospital.

Inclusion: Qualified all nurses with have criteria the work in intensive care unit during the period of the study.

Exclusion: Other nurses work in other department.

Sample size: Total coverage

Data collection tools

- Designed questionnaire was used to collection data, age, experience, definition, indication uses, complication.
- Observation check list

Data Analysis

The data were code and analyzed manual and statistic table from the data using statistical package for social science (SPSS).

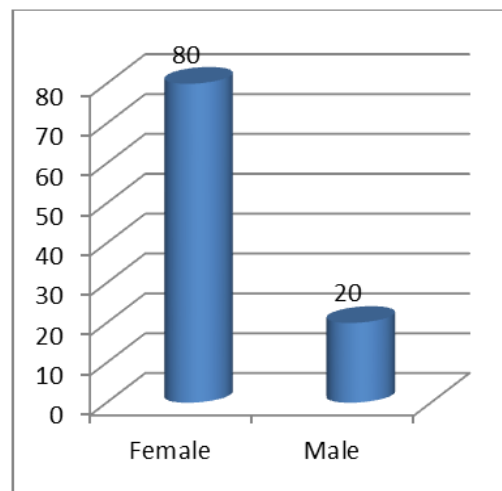


Figure 1: Study show the distribution study subject according to sex

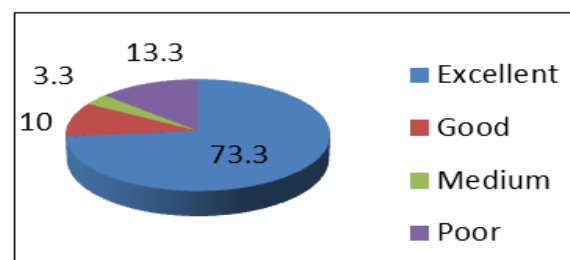


Figure 2: Knowledge of the study subject according about definition of mechanical ventilation

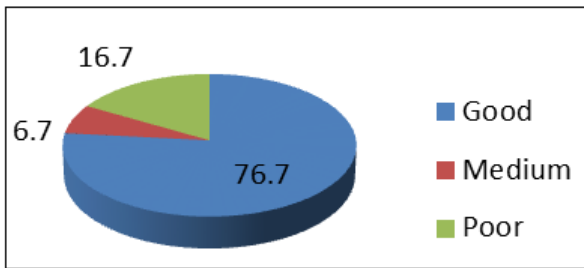


Figure 3: Show knowledge of subject about Compulsory artificial respiration

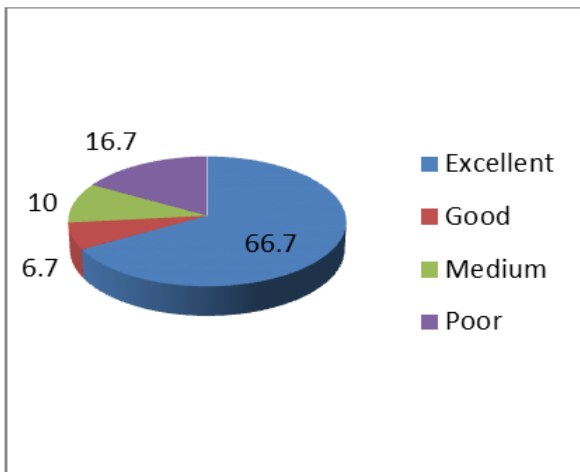


Figure 4: Show the distribution study subject according to Indication of mechanical ventilation

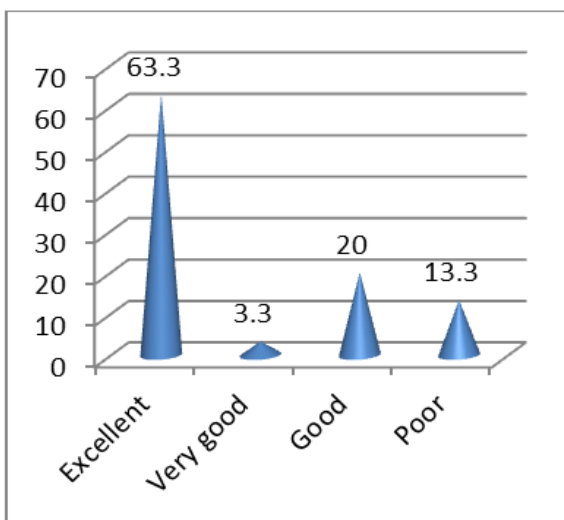


Figure 5: Show the distribution study subject according to Role of nursing before placing the patient ventilator

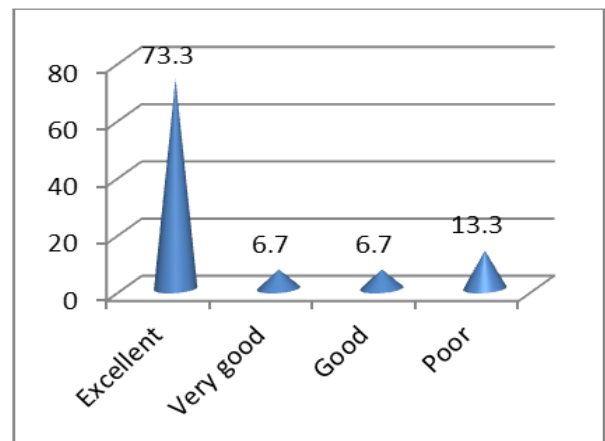


Figure 6: Show knowledge of subject about The Role of nursing during and after placing the patient on the ventilator

DISCUSSION

Mechanical ventilation term for artificial ventilation where mechanical means is used to assist or replace spontaneous breathing and used to save life, mechanical ventilation is major causes of death and other complication. So the nurses must have good knowledge and practice for care of patient on mechanical ventilator with high qualified manner. The descriptive cross sectional study at Bahri teaching hospital from March to May using statistical package for social science for analysis of questionnaire (SPSS) and check list. Regarding the age of nurses the majority less than 30years because the older people migrated aboard (Figure 1). Regarding the most of sex female due to the male can work other filed to increase income (Figure 2). Regarding level of education of nurses more than half bachelors because desired graduated bachelor degree more than Diploma. The study population match of conducted done in Sudan in university of Khartoum in Khartoum teaching hospital to assess knowledge and practice of qualified nurses Regarding care of patient on mechanical ventilator it was structured questionnaire consisting of close questions. The study involved 40qualified nurses were selected as total converge of all nurses in ICU (Figure 3). Regarding the experience of the study population the most less than 5 years due to graduates or travel experience nurses to another countries (Figure 4). Regarding more than half of study population knowledgeable due to they take intensive course in ICU (Figure 5 & 6). Regarding nursing intervention of patient on mechanical ventilator more than half due to specialized course in intensive care unit match of the study conducted of USA done at 2004 had conducted comparative study to exam effect the of closed end tracheal suction system and open end tracheal on oxygen saturation. Regarding complication of mechanical ventilator in ICU more than half due to same in signs of diseases with signs of the Complication and the study population match of study conducted in German done at 2007 study conducted to nurses implementation of guidelines for prevent

ventilated associated pneumonia from centers for diseases control and prevention, implement practice, of nurses employed in hospital without such protocol. Regarding the performance of the study population the majority is good due to bachelors graduates.

CONCLUSION

Based on the results of the study the researcher concluded that: The majority of the study subject Importance of Mechanical ventilator knowledge and practices. Study concludes that education is essential to increase the knowledge and practice of nurse's staff in intensive care unit.

RECOMMENDATION

Based on the conclusion of this study researcher recommended the following:

- Mechanical Ventilator is a lifesaving for intensive care units patients however nurses need more training about it.
- Applying knowledge into practice is more valuable it enhances demonstrate evidence based practice.
- Suggest statistical study about patient in intensive care especially mechanically ventilated patients.
- Continuous training program for all nurses to refresh their knowledge.

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