

# Care of Mechanical Ventilated Patients in General Ward: Nurses Perspective.

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**ABSTRACT—Aim:** This study aimed to explore the care of mechanically ventilated patients in general wards from the nurses' perspective.

**Methodology:** A cross-sectional descriptive study using a self administered questionnaire was given to the nurses with a purposive convenient sampling method in adult patients from medical, surgical and isolation units in studied hospital in KSA. **Results:** 149 participants from general units represents various years of experiences shared their perception on the knowledge and competencies ( $M=3.38\pm.62$ ) the support they received ( $M=2.41\pm.78$ ), their satisfaction and confidence ( $M=2.86\pm.81$ ) and the resources provided ( $M=2.44\pm.69$ ) for caring MV patients in their general unit revealed the total mean in each categories were in the state of either neutral or disagree with the items given. The participants admitted that they found themselves are competent in performing suctioning with aseptic technique and ability to identify the possible complications confidently. However the participant concluded that it was inadequate support for them, staffing ratio, equipment and facilities was inappropriate which leads to dissatisfaction and less confident in caring for MV patients.

**Conclusion:** This study concludes that caring for patients in general ward causing dissatisfaction among the staff and place patients in risk. Hospital administration needs to ensure that general ward nurses are trained accordingly, provide adequate staffing ratio, and prepare the physical environment and suitable equipment to care for MV patients in general ward.

**Keywords—mechanical ventilation; general ward; nursing care**

## INTRODUCTION

Ventilating patients to support their respiratory efforts and to maintain adequate oxygen level is an important measure in caring for the critically ill (Zeitoun et al, 2007; Rose & Gerdtz, 2009). Nurses who are caring for these MV-supported patients require special technical skills (Grossbach, Chlan & Tracy, 2011). Research has shown that nurses need to be equipped with basic knowledge on ventilator settings, with expertise in invasive monitoring and must be highly competent in assessing patient safety and preventing complications (Grossbach, Chlan & Tracy, 2011). The intensive care unit (ICU) is known as the most appropriate place to care for MV patient as the ICU provides the appropriate management and environment compared with most general ward (Tang, Tong, YU, Tong, & Buckley, 2012). Hence, the ACCCN (Australian College of Critical Care Nurses) recommended that the nurse/patient ratio be maintained as 1:1 to ensure closely

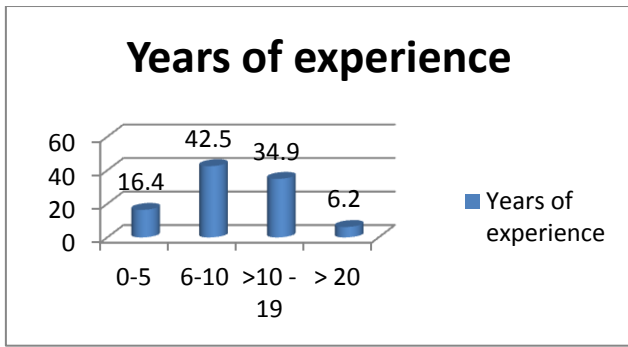
monitored safe patient care ( Couchman, Wetzig, Coyer & Wheeler, 2007; Rose & Gerdtz, 2009). Research also established that treating MV patients in ICU results in high survival rates compared with survival on general wards (Hersch et al. 2007; Tang, Tong, YU, Tong, & Buckley, 2012). However, there is a new phenomenon in which shortages of ICU beds require that some MV-patients be cared for in the general ward (Hersch et al. 2007). This practice results in causing the nurses to face the complex demands of critically ill patients care, difficulties in managing emergencies, and the inability to provide satisfactory care with confidence. The need of nurses to be highly knowledgeable and have the necessary skills to manage critically ill patient becomes essential especially when the patients are located in general wards (Grossbach, Chlan & Tracy, 2011; Rose & Gerdtz , 2009). MV patients in the general wards are a great challenge for nurses, for the patient and relatives and even to the Hospital Administration. In this situation and without the essential training not only will the care be compromised but most of all, so will the patient safety. It also jeopardizes the overall efficiency of the nurses and affects the reputation and standard of the hospital.

The specific objectives of this study were to identify any areas of concern, underline specific problems that occur and address what information is significant to ward nurses when caring MV patients in the general ward settings. Therefore this study's general aim was to explore the care of mechanically ventilated patients in general wards from the nurses' perspective.

## RESULTS

### Demographic data

The study included 149 participants from different general units Male Medical ward (MMW) 24.8% (n=37), Female Medical ward (FMW) 23.5 % (n=35), Female Surgical ward (FSW) 23.5% (n=35), Male Surgical ward (MSW) 19.5% (n=29) and Isolation 8.7% (n=13). The participants represents various years of experiences; the biggest group was 42.5% (n=62) between from 6 to 10 years figure 1. However, only 36.5% of the participants had previous critical care experience.



**Educational status**

The study explores the related educational sessions attended by the participants who experienced cared for mechanically ventilated patient= 119 (82.1%). 22(26.2%) nurse had attended one or two relevant courses to care for mechanically ventilated patients, such as intensive/critical care course 5 (4.2%), 12(10.1%) Advanced resuscitation courses and 7(5.9%) attended sedation/neuromuscular blockade course. Relating to the competencies the results showed that 27(18.2%) nurses had completed one or more relative competencies such as Critical care patient assessment 14(11.8%), Sedation 13(10.9%) Pain assessment 13(10.9%) or specific procedures performed for mechanically ventilated patients 12(10.1%). The participants were also trained on the following: - Invasive IV line care 17(14.3%), ECC drug administration 6 (5.0%), RRT management 8(6.7%), Critical care clinical training 2(1.7%), ABG interpretation 15(12.6%) or Basic ECG and Arrhythmia 24(20.2%).

**Over all perceptions**

The participants shared their perception on the knowledge and competencies, the support they received, their satisfaction and confidence and the resources provided for caring MV patients in their general unit. The total mean in each categories showed that the participants in the state of either neutral or disagree with the items given.

1- Perception on own knowledge and competencies :-

All participants in general, perceived neutrally on their ability and competencies when dealing with mechanical ventilation patients (M= 3.39 ±0.62) except on the practice of suctioning with aseptic technique (M= 4.39±.98). They showed agreement on their ability to perform systematic assessment procedures (M=3.13±1.1), awareness of identifying possible complication of endotracheal tube suctioning (M=4.01±.67), the invasive line care and interventions to prevent nosocomial (M= 3.62±.96) , prioritize the care for MV patients (M= 3.63±.97), recognize patient in deteriorating state (M=3.93 ±.80) and the knowledge of the importance of safety measures in caring (M=3.50±.99)

2- Perception on the support:-

The result showed that generally the participants disagree on aspect of the support given M= 2.41±.78. Especially they strongly disagree on that they have critical care physician available in the general ward to determine pre-existing illness (M= 1.78 ±.99) or to determine use of medications which may influence the health of the patient (M=1.75±.99)

3- Perception on satisfaction and confidence

The participants perceived in general neutrally in their satisfaction and confidence (M=2.86±.81), although they agree on their ability to provide emotional support toward patient and his family (M=3.45 ±1.07) and disagree on familiarity with all the equipment used for mechanically ventilated patients (M=2.53± 1.16), and overall outcome of mechanically ventilated patients care (M=2.54 ±1.2).

4- Perception on the resources: Staffing , Equipment and Facilities

The study also showed that the nurses generally perceived disagreement on resources that they got for caring MV patients in the general unit (M= 2.4 ± .69) especially they strongly disagree on the suitability of the setting in general ward for caring of MV patients (M=1.67±.95), disagree on Nurse-to-patient ratio in general ward is maintained as 1:1 or 1:2 in providing MV patient care (M=2.09± 1.3). they found that general ward is not well equipped to take care of the mechanically ventilated patients (M= 1.99±1.0) and do they received technical support in general ward for repair, maintenance, and decontamination of mechanical ventilated devices (M=2.28±1.12)

**DISCUSSION**

The general ward nurses perception were explored in four dimensions; knowledge and skills, support received,

Items	Total mean	SD	Dimensions
the knowledge and competencies	3.38	.62	Neutral
the support	2.41	.78	Disagree
the satisfaction and confidence	2.86	.81	Neutral
the resources: Staffing , Equipment and Facilities	2.44	.69	Disagree

satisfaction and confidence, and the resources provided for caring MV patients in their general unit. The researchers were able to identify from the total mean shows the nurses not agree nor disagree, showing that the nurses had concerned on lack of knowledge and skills to care for the MV patients. It is essential to have knowledgeable and skilled nurses to care for the mechanical ventilated comprehensive care and recognizing their knowledge and skill has great value before assigning them for such Care (Grossbach, Chlan & Tracy, 2011; Rose & Gerdtz , 2009). It is internationally recognized as a gold standard to certify intensive care nurses with ACLS Provider course to manage both cardiac arrest and peri arrest situation (Intensive and Critical Care Nursing, 2009). Literature argued that it is essential to provide relevant competencies to the nurses for the safe care of MV patients (Couchman et al. 2007; Rose & Gerdtz , 2009; Grossbach, Chlan & Tracy, 2011). This further challenge when the support from specialist, respiratory therapists and other critical team are found to be minimal for caring MV patients in the ongoing care on the general wards (Lin et. al). However, the nurses shared that they have adequate skill on certain procedures and able to perform confidently such as suctioning technique, IV line care, awareness of ETT complications, and ability to recognize the deterioration of MV patients. The standardized equipped room is increasingly being adopted for MV nursing care areas that will assist to monitor and improve quality of nursing care and reduce the costs to the care (Standards for intensive care 2007). Study suggested that nursing leaders and managers to support the nurses in providing good nursing care by ensuring the nurses workload is fairly utilize to ensure patient safety (Nurse staffing in Critical care, 2003). Nurses are facing insufficient time to focus for MV patients as they are caring more than two patients at one time in the general ward.

## CONCLUSION

This study concludes that caring for patients in general ward causing dissatisfaction among the staff and place patients in risk.

Hospital administration needs to ensure that general ward nurses are trained accordingly, provide adequate staffing ratio, and prepare the physical environment and suitable equipment to care for MV patients in general ward. The nurses

in general ward requires an exposure to clinical critical care units which may lead to their understanding of the environment needed for the MV nursing care. There is an urgent attention is needed to

promote the role of a nurse to be specialized by special training. Nurse in these areas must be encouraged to attend related seminars and workshops related to critical care. This study result contributed to the overall needs for improving the nursing care for the MV

patients in the general units and by providing the appropriate support, facilities and adequate staffing ratio is a worthy approach to both improving patient care and reducing its related costs. Providing consistency in urgent or emergency care to the MV Patients in general ward is still questioned and further study is necessary to identify the nurses' ability to care the clinical changes condition of a patient with mechanical ventilator support.

## REFERENCES:

1. Zeitoun S.S, De Barros A.L, Michel J.L & De Bettencourt A.R (2007). Clinical validation of the signs and symptoms and the nature of the respiratory nursing diagnoses in patients under invasive mechanical ventilation. *Journal of Clinical Nursing*, 16, 1417–1426
2. Grossbach I., Chlan L., Tracy, M. F. (2011). Overview of Mechanical Ventilatory Support and Management of Patient- and Ventilator-Related Responses. *Critical Care Nurse*, 31(3), 30-44
3. Grossbach I, Stranberg S, & Chlan L (2011). Promoting Effective Communication for Patient Receiving Mechanical Ventilation. *Journal of CriticalCareNurse*, 31(3) 46-61.
4. Couchman B.A, Wetzig S.M, Coyer F.M. & Wheeler M.K (2007). Nursing care of the mechanically ventilated patient: What does the evidence say? Part one. *Journal of Intensive and Critical Care Nursing*, 23, 4-14
5. Chacon E, Estruga A, Murias G, Sales B, Montanya J, Lucangelo U...& Jam R (2012). Nurses' Detection Of Ineffective Inspiratory Efforts During Mechanical Ventilation. *American Journal Of Critical Care*, 21, 4
6. Tang W.M, Tong C.K, YU W.C, Tong K.L, & Buckley T. A (2012). Outcome of Adult Critically Ill Patients Mechanically Ventilated on general Medical Wards. *Hong Kong Med Journal*,18, 284-290
7. Ferguson N. D. (2012). Use of Mechanical Ventilation At Lower Level Among Patients Without Lung Injury Associated With Better Clinical Outcomes. *Journal of American Medical Association*, 308 (16),1689-1690
8. Cox C. E, Martinu T, Sathy S. J, Clay A. S, Chia J, Gray A. L...& Tulsy J. A (2009). Expectations and Outcomes of Prolonged Mechanical Ventilation. *Journal of Critical Care Medicine*, 37 (11), 2888-2894
9. McQueen S, Dickinson M, Pimblett M (2010). Human patient simulation can aid staff training

in non-invasive ventilation. *Journal of Nurse Times*, 106 (26), 20

10. Hersch M, Sonnenblick M, Karlic A, Einav S, Sprung C. L, Izbicki G (2007). Mechanical ventilation of patient hospitalized in medical wards vs. the intensive care unit-an observational, comparative study. *Journal of critical Care*, 22, 13-17
11. Lin MS, Yan YH, Wang JD, LU HM, Chen L, Hung MC, Fan PS & Chen CR (2013). Improved Survival for an Integrated System of Reduced Intensive Respiratory Care for Patients Requiring Prolonged Mechanical Ventilation. *Respiratory Care*, 58 (3), 517-524
12. Hansen B.S. & Severinsson E. (2009). Dissemination of Research based knowledge in an intensive care unit – A qualitative study. *Intensive & Critical Care Nursing*, 25, 147-154
13. Rose L. & Gerdtz M.F. (2009). Mechanical ventilation in Australian emergency departments: Survey of workforce profile, nursing role responsibility, and education. *Australian Emergency Nursing Journal*, 12, 38-43.
14. Rose L. & Gerdtz M.F. (2009). Review of non-invasive ventilation in the emergency department: clinical considerations and management priorities. *Australian Emergency Nursing Journal* 12, 38-43. *Journal of Clinical Nursing*, 18, 3216–3224.
15. Burns, S. M. (2009). Pulmonary critical care in the United States of America: A complex issue. *Intensive & Critical Care Nursing*, 25(1), 1-3.
16. McKinley, S (2007). Standards for intensive care. *Australian Intensive Care Nursing*, 23, 309-312.
17. Galley, J. & O’Riordan B. (2003). Nurse staffing in critical care: Royal college of Nursing. WIG ORN: London. Retrieved from [http://www.rcn.org.uk/\\_\\_data/assets/pdf\\_file/0008/78560/001976.pdf](http://www.rcn.org.uk/__data/assets/pdf_file/0008/78560/001976.pdf)

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