Nurses' Performance regarding Management of Patients with Chest Infection in Neuro-Critical Care Unit

Thesis

Submitted for Fulfillment of the Requirements of the Master Degree in

(Critical Care Nursing)

By

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Asmaa Hosney Kandel

Dedication

To

My Family for their warm affection, patience, encouragement, and for always being there when I needed them

To

My husband who always support me, my father & my Mother who fill my life with joy.

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List of Abbreviations

Abb.	*Full Term*
NCCU	Neuro Critical –Care Unit
VAP	Ventilator Associated with Pneumonia
ROM	Range of Motion Exercise
MV	Mechanical Ventilator

Abstract

Introduction Chest infection is a serious lung infection. It affects up to as many as one-third of patients in neuro-critical units. This increases the morbidity and mortality of those patient populations. ***The aim of this study*** was to assess the nurses' performance regarding caring for patients with chest infection in neuro –critical unit. ***Design: A*** descriptive study. ***Setting:*** The study was conducted in the neuro-critical care units (NCC) at Bab Elsheria Governmental Hospital (Alazher University). ***Study subjects:*** A convenience sample of nurses (No=50). ***Data collection tools:*** Nurses' self-administered questionnaire and observational checklists of management of chest infection. ***Results:*** Approximately 48% of the studied nurses had satisfactory level, while (52%) of them had unsatisfactory level about total knowledge regarding nurses' management of chest infection and (42%) of studied nurses had satisfactory level, while (58%) of them had unsatisfactory level regarding total practice about chest infection, there was no statistically significant relation between total knowledge and total practice. ***Conclusion:*** Based on the study findings, most of the studied nurses at Neuro critical –care unit had unsatisfactory level of performance (Knowledge & Practice) regarding management of patients with chest infection in Neuro-critical care unit. ***Recommendations:*** Further studies were recommended to evaluate the reflection of in-service training program regarding caring of patients with chest infection in NCC units on nurses' performance and consequently on the patients' outcome.

Keywords: Chest Infection, Nurses' performance, Neuro-Critical Care Unit.

Introduction

Chest infection is an inflammatory condition of the lung affecting primarily the microscopic air sacs known as alveoli. There are many types of chest infection that affect lower respiratory system such as bronchitis and pneumonia which is the most common types of chest infection in neuro critical care units ***(Brown et al., 2011)***.

Chest infection is a serious lung infection that can be generally defined as an infection of one or both lungs, with dense areas of lung inflammation. It occurs when a person inhales pneumonia germs into the lungs or aspirates liquid or other debris into the lungs. People who are ill or who have chronic conditions are more prone to develop pneumonia, in which consolidation of the affected part and a filling of the alveolar air spaces with exudate, inflammatory cells, and fibrin is characteristic ***(Wood, 2011).***

Chest infection affects up to one-third of patients in neuro-critical care units. This increases the morbidity and mortality of those patient populations. Chest infection causes the highest attributable mortality of all medical complications. A comprehensive multidisciplinary team approach is required at the hospital level was based on

implementation of evidence-based management strategies can improve outcomes and reduce costs. The problem of chest infection prevention and intervention is vital and important to be researched ***(Sellers et al., 2012).***

According to the (WHO) chest infection is the most common complications that leads to death worldwide after ischemic heart diseases, and it is the third after cancer in USA, approximately 160,000 die of chest infection in neuro-critical unit. It is the leading cause of serious and long term neurological disability each year ***(World Health Organization 2014).***

In Egypt, chest infection among male patients in neuro- critical care units is (51412) and male deaths (163) cases, in female there is (41951) and female deaths (137) cases ***(A sample of Public & Central hospitals, Ministry of Health and Population of Egypt by 60% in 2014).***

There are many types of chest infection. The most common type is pneumonia. The causes of pneumonia can be grouped into many categories: community-acquired pneumonia, hospital-acquired pneumonia, health care associated pneumonia, ventilator-associated pneumonia, aspiration pneumonia, pneumonia caused by opportunistic organisms, and others. Most of available data suggest chest infection which is often due to aspiration. Most

hospitalized patients routinely aspirate and patients with an impaired swallowing mechanism due to neurological injury are at especially high risk ***(John and Benjamin, 2011).***

Neuro-critical care is a subspecialty of critical care medicine, dedicated to the care and the advancement of care of critically ill patients with neurosurgical or neurological diseases. Neuro-critical care patients are heterogeneous, in both their disease process and the therapies they receive, however, several studies demonstrated that care of these patients in dedicated Neuro-critical care units (NCCU) by neuro-intensivists, who coordinate their care which is associated with reduced mortality and resource utilization ***(Le Roux et al., 2012).***

Neuro critical care unit provides care for critically ill patients with injury or disease of the central and peripheral nervous system and complication of decreased immunity such as chest infection. care of patients with chest infection is provided by a multidisciplinary team including physicians with specialized training in neuro-critical care, acute care nurse practitioners, critical care nurses' with neuroscience training, pharmacists with specialized NCCU training such as oxygen therapy and chest physiotherapy, in collaboration with an extensive team of specialists from various disciplines ***(Suarez, 2012).***

Significance of the study

Nurses need a deep understanding of nursing care priorities for clients with chest infection. Nurses are responsible for a complex performance that implies specific set of knowledge and practice needed for providing specific nursing implementation ***(Levit et al., 2011).***

The nurse plays vital role in caring for patients with chest infection and instruct them to breathe slowly and rhythmically in a relaxed manner and to exhale completely to empty the lungs. The patient is instructed to always inhale through the nose because this filters, humidifies, and warms the air. If short of breath, the patient should be instructed to concentrate on prolonging the length of exhalation; this helps avoid initiating a cycle of increasing shortness of breath and panic ***(Goodman and Kumar, 2014)***

Therefore, knowledge and use of evidence –based practice are essential to ensure best nursing practice. Nurses must be knowledgeable of this initiative to support clinical practice toward improved patients' outcomes. A high quality performance of the nurses at neuro critical care units would be important to reduce the complications and to save patient life's to reduce mortality &morbidity rates.