Assessment of Nurses' Performance Regarding Infection Control Measures for Patients with Indwelling Urinary Catheter

Thesis

Submitted for Partial Fulfillment of the Requirement of Master Degree in Medical- Surgical Nursing

By

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LIST OF ABBREVIATION

HAIs **:** Healthcare-Associated Infections

TATRC **:** Telemedicine and Advanced Technologies Research Center

CDC **:** Centers for Disease Control and Prevention

CAUTI **:** Catheter Associated Urinary Tract Infection

CMMS **:** Centers for Medicare and Medicaid Services.

IDSA **:** Infectious Diseases Society of America

ASC-AB **:** Asymptomatic Catheter Associated Bacteriuria

SUTI **:** Symptomatic Urinary Tract Infection

UTI **:** Urinary tract infections.

MDROs **:** Multidrug-Resistant Organisms

SSI **:** Surgical Site Infection

BSI **:** Blood Stream Infection

UTI **:** Urinary Tract Infection

PNEU **:** Pneumonia

MRSA **:** Methicillin-Resistant Staphylococcus Aureus

VRE **:** Vancomycin-Resistant Enterococcus

ICU **:** Intensive Care Unit

Operational Definitions

Urinary catheters: A urinary catheter is any tube system placed in the body to drain and collect urine from the bladder

Short-term catheterization: generally considered to be a period of less than 30 days of having an indwelling urinary catheter.

Indwelling urinary catheter: drainage tube that is inserted aseptically into the urinary bladder through the urethra, is left in place, and is connected to a closed collection system. (Frequently called a "Foley catheter.")

Straight catheterization: intermittent catheterization or in-and out catheterization, brief insertion and removal of a catheter into the bladder via the urethra to drain urine at different time intervals.

Standard Precautions: Basic infection control precautions designed for the care of all patients in hospitals, regardless of their diagnosis or presumed infection status. These include: hand hygiene; use of gloves, gown, mask, eye protection or face shield, depending on the anticipated exposure; and safe injection practices. Also, equipment or items in the patient environment likely to have been contaminated with infectious body fluids must be handled in a manner to prevent transmission of infectious agents

Infection: The presence of an organism in the body, such as MRSA or VRE causing disease (e.g., urinary tract infection, pneumonia, abscesses), characterized by the clinical manifestations of the disease, such as increased white blood cell count, fever, pus, or erythema

Healthcare-Associated Infection (HAI): Infection associated with a hospital or healthcare setting, usually secondary to the patient's original condition. The phrase HAI has replaced nosocomial" in current terminology".

Healthcare-Associated MRSA (HA-MRSA): The CDC defines HA-MRSA as healthcare associated if the original admission criteria for hospitalization is within 48 hours before culture was obtained or if in the year before the present hospitalization, the patient had any one of the following: hospitalization, surgery, residency in a long-term care facility, hemodialysis or peritoneal dialysis, or at the present admission had indwelling percutaneous devices or catheters.

Methicillin-Resistant Staphylococcus aureus (MRSA): A strain of Staphylococcus aureus resistant to methicillin. Such strains also are resistant to oxacillin, nafcillin, cephalosporins, and imipene

Catheter-associated urinary tract infection (CAUTI): defined as urinary tract infection are catheter-associated (i.e. patient had an indwelling urinary catheter at the time of or within 48 hours before onset of the event).

Bacteremic urinary tract infection: are (bloodstream infection secondary to a UTI). Is divided into two classifications: symptomatic and asymptomatic CAUTI.

Symptomatic UTI (SUTI): patients with a positive urine culture and experiencing UTI signs or symptoms with no other recognized cause of the symptoms.

Asymptomatic bacteriuria (ASB): the presence of bacteria in the urine, which is not causing symptoms of a UTI.

Performance: refer to nurses knowledge and practice

ABSTRACT

Catheter associated urinary tract infection is the most common hospital acquired infection; CAUTIs were considered an avoidable complication, Nurses can be very proactive for patients with indwelling catheters, whether short- or long-term. Implementation of infection control measures might help to minimize the risk of this complication. The aim of this study was to assess the performance of nurses' regarding infection control measures for patients with indwelling urinary catheter; the study was carried out to assess what is the nurses' level of knowledge regarding infection control measures for patients with indwelling urinary catheter?, What is the nurses' level of practice regarding the application of infection control measures in care for patients with indwelling urinary catheter? And what is the relation between the nurses' level of knowledge and practice regarding care for patients with indwelling urinary catheter and its related infection? The study was carried out at the intensive care units (surgical ICU, neurological ICU) of Mansoura and Ain Shams University hospitals using a descriptive research design. The study included all available nurses working at Surgical and neurological Intensive Care Units of Mansoura University hospitals and Ain Shams University hospitals who provide direct care to female catheterized patients and they have no previous training regarding urinary catheter infection control measures. Two tools were used for data collection, I: self -administered questionnaire sheet; it included personal characteristic of nurses and assessment of the level of the nurses' knowledge regarding infection and infection control, indwelling urinary catheter; the tool was developed by the researcher guided by the review of literature. II: standardized observational checklist it used to assess nurses' practice regarding indwelling urinary catheter care for female patients. The result of the present study concluded that more than half of nurses had satisfactory level of knowledge regarding indwelling urinary catheter and infection control measures, the majority of the studied nurse had incompetent level of practice regarding indwelling urinary catheter Therefore a weak positive correlation between nurse's level of knowledge and level of practice regarding infection control measures for female patients with indwelling urinary catheter. This study recommended that training program should be developed and in service training program should include all knowledge and practice that related to prevention of nosocomil infection.

Key wards: Urinary Catheter, Nursing Care, infection control measures, Urinary Tract Infection;

INTRODUCTION

INTRODUCTION

Urinary catheterization is a common healthcare intervention used to manage urinary dysfunction that poses serious associated risks and complications. Placement of an indwelling catheter remains an important and frequently used treatment option. For example, approximately 25% of patients cared for in acute care hospitals will have an indwelling catheter during some portion of their hospital admission **(Saint & Lipsky, 2011)**

Approximately 4 million Americans undergo urinary catheterization annually, between 15% and 25% of patients may receive indwelling catheters during hospitalization, and more than 500,000 of these catheterizations involve indwelling catheters left in place for some period and the prevalence of catheter use in residents of long-term care facilities is estimated between 7.5% and 10% **(Saint, 2010**).

In Egypt there is a **s**tudy conducted in Mansoura University Hospital intensive care units demonstrate that blood stream ,lower respiratory and catheter associated urinary tract infection as well as wound and skin infection was 40.63%, 18.75%, 17.97% and 6.25%,3.91% respectively **(Mansoura University, Microbiology Dep. 2010).**

Urinary catheter is a commonly used device for different patients in various healthcare settings. Their use may put patients at increased risk of urinary tract infection. Urinary catheter as a foreign

body, allows bacteria to colonize and enter the body. The rate of acquisition of bacteriuria is approximately 5% per day with an indwelling urinary catheter **(Phillps et al., 2009)**.

The uses of indwelling urinary catheter increase the risk of developing catheter-associated urinary tract infections (CAUTIs). CAUTIs account for a significant proportion (up to 30-40%) of healthcare-associated infections which in turn may have great financial impact on the healthcare system**. (Burke & Zavasky, 2006)**

The Nurses can be very proactive for patients with indwelling catheters, whether short-or long-term. The nurse must follow general guidelines for controlling infection and use program according to hospital policy. In addition, protective meseaures must be used by nurse to prevent occurrence of infection for patient and themselves **(Potter & Perry, 2005).**

The nurse plays an important role in the management of the patient with urinary catheter. These roles include patient preparation, role at time of catheter insertion, role after catheter insertion and daily catheter care. Moreover, the nurse plays an important educative and counselor role in patient home care consideration **(Harkreader, 2006).**

Significance of the Study

Despite infection control policies and procedures, catheter associated urinary tract infection (CAUTI) rates remain a significant problem in the hospitals especially in the intensive care units (ICUs) according to statistical reports derived from microbiology department in Mansoura university at 2010 indicated that (CAUTI) 17.97% among healthcare-associated infections. Therefore, this study will clarify the relation between critical nurses level of knowledge and level of practice in the care for patients with urinary catheter. Hopefully findings of this study will help in improving quality of patient's care.

Aim of the Study

The aim of this study:

The study aims to assess the performance of nurses' regarding infection control measures for patients with indwelling urinary catheter through:

1- Assess nurses' level of knowledge regarding infection control measures for female patients with indwelling urinary catheter.

2- Assess nurses' level of practice regarding application of infection control measures in care of female patients with indwelling urinary catheter.

Research Questions

1- What is the nurses' level of knowledge regarding infection control measures for patients with indwelling urinary catheter?

2- What is the nurses' level of practice regarding the application of infection control measures in care for patients with indwelling urinary catheter?

3- What is the relation between the nurses' level of knowledge and the nurses' level of practice regarding care for patients with indwelling urinary catheter and its related infection?