Assessment of Health Personnel's Performance Regarding Infection Control in Intensive Care Units

Thesis

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

By

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2017

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Acknowledgement

First and foremost, I feel always indebted to **Allah**, *the Most Kind and Most the Merciful for all his blessing and for giving me the will and strength for completion of this work.*

I wish to express my deep appreciation and gratitude to **Assist. Professor Dr. Howyda Ahmed Mohamed**, *Assist Professor of Medical surgical Nursing, Faculty of Nursing, Ain Shams University, and words cannot describe how grateful I am for her guidance, valuable support, constructive criticism, and continuous, unlimited help. I would not have been able to start and reach perfection of this work without her.*

I am deeply grateful to **Dr. Mona Nader,** *Lecture of Medical surgical Nursing, Faculty of Nursing, Ain Shams University, for her supervision, help and valuable support and guidance, I am deeply affected by her noble character, perfection, care and consideration.*

Last but not least, I am grateful to ***my Family, and my bride*** *and to all those who sincerely helped me to fulfill this work.*

Sameh Hassan Abed al Shaikh Ahmed

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List of Abbreviations

Abbr.	Full term
BSC	: Blood stream infection
CABSIs	: Central line associated blood stream infection
CAUTIs	: Catheter-associated urinary tract infection
CDC	: Central for disease control and prevention
CNO	: College nursing of Ontario
CRBSI	: Catheter-related bloodstream infection
CVC	: Central venous catheter
DIPC	: The director of infection prevention and control
HBV	: Hepatitis b virus
HCAI	: Healthcare-association infection
HCW's	: Health care workers
IC	: Infection control
ICU	: Intensive Care Unit
IPC	: Infection prevention control
IV	: Intravenous
NHRMC	: National health and medical research council
NI	: Nosocomial infection
PPE	: Personal protective equipment
RCN	: Royal College of nursing
SOD	: Selective oropharengal decontaimination
SSIs	: Surgical site infection
UTI	: Urinary tract infection
VAP	: Ventilator-associated pneumonia
WHO	: World Health Organization

Abstract

Infection control is a discipline that applies epidemiologic and scientific principles and statistical analysis to the prevention or reduction in rates of nosocomial infections. Indeed, infection control is a key component of the broader discipline of hospital epidemiology. **Aim:** assess of health personnel's performance knowledge, practice and attitude regarding infection control in I.C.U. **Setting**: The study was conducted in three intensive care units (Surgical ICU, Neurological ICU, Medical emergency ICU) at Ain Shams University Hospitals. **Design:** A descriptive exploratory design used in carrying out the study. **Subjects:** A purposive sample of 50 nurses, 15 physicians and 6 workers. **Tools:** data were obtained through three main tools; Self-administered questionnaire tool, observation checklist and attitude questionnaire tool. **Results:** Nurses had unsatisfactory level of knowledge, practice & positive attitude. There were satisfactory moderate significant relation between level of practice and their **Conclusion:** About two-thirds of studied nurses had unsatisfactory level of knowledge and less than half of them had unsatisfactory level of practice. Less than one third of physicians had unsatisfactory level of knowledge and all of them satisfactory level of practice. Half of workers had unsatisfactory level of knowledge and more than half had unsatisfactory level of practice. As regard attitude most of them had positive attitude. There is statistical significant between the health personnel's and the age, level of education and years of experience. **Recommendations:** Education**:** Develop an orientation program for newly appointed staff in infection control. Develop health teaching programs for nurses, through a simple booklet with update knowledge and instruct about infection control measures. Research: The study should be replication on large sample in different hospitals setting to generalize the results. Close suppression and teaching on patients is needed to ensure that quality of care is provided by health personnel. Practice: Increase the number of nurses in each department based on international measures patient ratio and workers to improve quality of care.

Key words: health personnel's, infection control, intensive care unit.

Introduction

Hospital acquired infection accounts for higher rates of morbidity and mortality among critically ill patients, due to severity of illness and thus increased susceptibility to acquire more micro-organism related to their presence in the intensive care unit (ICU). The risk of acquiring hospital acquired infection is especially significant in the ICUs. A huge number of immune compromised patients are admitted to ICUs. Approximately 30% of ICU patients are affected by one or more episodes of hospital acquired infection ***(Louis, 2011).***

Nosocomial infection (NI), or hospital acquired-infection or Health-care associated infection (HCAI) back to infection that is acquired during the process of care and manifested during the time of admission to a hospital or other health-care facility. About 5%-10% of patients admitted to acute care hospitals in developed countries acquire HCAI at any given time, and the risk of acquiring infection is 2-20 times higher in developing countries ***(World Health Organization(WHO), 2010).***

Infection control (IC) prevention is the responsibility of critical care nurses, and represent an integral elements of patients' safety programmes. It encompasses the processes and activates which identify and reduce the risks of acquiring and transmitting endemic or epidemic infections among individuals. Inaction control and prevention back to the

clinical application of microbiology in practice. It is also a quality standard which is essential for the well-being and safety of patients, staff and visitors in hospitals' environment. It affects most departments of the hospital that are involved in issues of quality, risk management, health safety ***(Royal College of nursing (RCN), 2012).***

The costs of infection control and staffing are less when compared to that of HCAI. As long as, nurses should have professional and ethical responsibilities to make sure that their knowledge and skills regarding infection control are up-to-date and they practice safely and completely at all times ***(Rasslan, 2011).***

The ICU is one of the busiest units in the hospital and uses some of the most sophisticated equipment and advances medical practices. However, the ICU may also experience higher infection rates due to the severity of illness of the ICU patients and to the frequent use of invasive devices as IV catheters, risk of infection from their own endogenous microorganisms ***(Berenholtz, Pronovost & Lipsett, 2014).***

Significance of the study

In Egypt despite the improvement in therapeutic measures, hospital building, sanitation nosocomial infection still form an increasing health problem, at ranges from 3% to 15.5% of total hospital discharges A health care workers who participate in invasive procedures must routinely use an appropriate barrier procedures to prevent skin and mucous membrane contact with all patient's blood ***(Mohammed, 2010).***

The biggest challenge is not the lack of effective precautions and evidence-based guidelines, but the fact that healthcare workers apply these measures insufficiently. Interventions to improve adherence to infection control measures should incorporate an evaluation of barriers to and facilitators of change researches investigated knowledge, attitude and behavior toward infection control in many hospitals on the island of Java by means of a questionnaire to identify problem areas, barriers and facilitators. ***(Mohammed, 2010).***

Aim of the Study

This study is aims to: assess of health personnel's performance regarding infection control in I.C.U through:

1- Assessing level of knowledge regarding infection control among physician, nurses and workers.

2- Assessing level of practice and attitude regarding infection control among Physician, nurses and workers.

Research question

This study was conducted for answering the following question:

1- What are the level of knowledge regarding infection control among physician, nurses and workers?

2- What are the level of practice and attitude regarding infection control among physician, nurses and workers?

Review of Literature

Infection is the invasion of a host organism's bodily tissues by disease-causing organisms, their multiplication, and the reaction of the host tissues to these organisms and the toxins they produce. Infections are caused by microorganisms such as viruses, bacteria, and large organisms like macro parasites and fungi ***(Damani & Pittet, 2012).***

Development of an infection occurs in a cycle. The six components of disease transmission cycle are: an infection agent or pathogen, a reservoir, place of exit, mode of transmission, place of entry, and susceptible host. An infection will develop if this chain or cycle remains intact. Nurses use infection prevention, and control practice to break the cycle so that infection can't develop ***(Regional Infection Control Networks (RICN), 2011).***

Chain of Infection: as described below, the traditional epidemiologic triad model holds that infectious diseases result from the interaction of agent, host, and environment. More specifically, transmission occurs when the agent leaves its reservoir or host through a portal of exit, is conveyed by some mode of transmission, and enters through an appropriate portal of entry to infect a susceptible host. This sequence is sometimes called the chain of infection ***(Central for disease control and prevention(CDC), 2012).***