Nurses' Performance for Prevention of Infection in Burn Unit at Universities Hospitals

Thesis

Submitted for Partial Fulfillments for Master Degree in Community Health Nursing

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List of Contents

List of Tables

List of Figures

List of Abbreviations

Abb.	Meaning
BSI	Bloodstream Infection
HAI	Healthcare-associated infections
HCAI	Health Care Acquired Infections
HCWs	Health care workers
HIC	High Income Countries
IC	Infection control
IPC	International Patent Classification
LMICs	Low and Middle Income Countries
MRSA	Methicillin-Resistant S.aureus
MOHAP	Ministry of Health & Population
NGIC	National Guidelines for Infection Control"
PPE	Personal Protective Equipment
PTSD	Post Traumatic Stress Disorder
PDIC	Professional Diploma in Infection Control
SD	Standard Deviation
UP	Universal Precautions
WHO	World Health Organization

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Abstract

Infection is one of the main complications among burned patients. Nurses working with such patients must possess competencies and knowledge in order to ensure delivery of quality of care. Aim: assess nurses' performance for prevention of infection in burn unit at Universities Hospitals. **Setting:** burn units at Ain Shams, El- Monufia, and Cairo University, Egypt. **Sample:** Purposive sample composed of all nurses (n=50) working three shifts in the previous mentioned setting. **Tools:** *First tool,* an interviewing questionnaire designed by the researcher to assess a) socio-demographic data, b) nurses' Knowledge. *Second tool,* Observational check list to assess nurses' performance in the burn unit. **Results:** Half of the studied nurses (50.0 %) were between age 40 years old. More than half (56.0%) of them were females, more than two thirds (66.0%) were married, more than one third (44.0 %) were had technical institute degree, more than one third (36.0%) had experience for 10-20 years and two thirds (60.0%) of them were not attend training courses. There was a statistically significant relation between, age, qualification, years of experiences and attending training course of the studied nurses and their total knowledge ($p<0.05$). was a statistically significant relation between age, qualification, years of experiences and attending training course of the studied nurses and their total practices ($p<0.05$). **Conclusion:** More than half of the studied nurses had unsatisfactory knowledge regarding infection control measurements. Also, more than two thirds of the studied nurses had total unsatisfactory performance. Nearly half of nurses show that un availability of hand drying materials, un availability of detergents and disinfectants and un availability of cleaners (Housekeeping) in the unit are the common barriers that affecting the nurses' performance to prevent and control of infection during caring of patients respectively. There is statistically significant positive correlation between total practices and total knowledge of nurses. **Recommendations:** An in-service training / continuing education must be stressed and provided for nurses working in such critically units.

Key words: Nurses' Performance - Prevention of Infection - Burn

Introduction

A burn is a type of injury to skin, or other tissues, caused by heat, cold, electricity, chemicals, friction, or radiation. Burn injuries are among the most devastating of trauma / all injuries and a major public health concern around the world ***(Qader & Muhamad, 2013)***.

Burn injuries occur more commonly among the poor. Smoking and alcoholism are other risk factor. Fire-related burns are generally more common in colder climates. Specific risk factors in the developing world include cooking with open fires or on the floor as well as developmental disabilities in children and chronic diseases in adults ***(Herndon, 2012)***.

Burns can be classified by depth, mechanism of injury, extent, and associated injuries. The most commonly used classification is based on the depth of injury. The depth of a burn is usually determined via examination, although a biopsy may also be used. It may be difficult to accurately determine the depth of a burn on a single examination and repeated examinations over a few days may be necessary. In those who have a headache or are dizzy and have a fire-related burn, carbon monoxide

poisoning should be considered. Cyanide poisoning should also be considered ***(Gus, 2012)***.

The prognosis is worse in those with larger burns, those who are older, and those who are females. The presence of a smoke inhalation injury, other significant injuries such as long bone fractures, and serious co-morbidities (e.g. heart disease, diabetes, psychiatric illness, and suicidal intent) also influence prognosis ***(Tintinalli, 2014)***.

A number of complications may occur, with infections being the most common. In order of frequency, potential complications include: pneumonia, cellulitis, urinary tract infections and respiratory failure. Risk factors for infection include: burns of more than 30% TBSA, full-thickness burns, extremes of age (young or old), or burns involving the legs or perineum. Pneumonia occurs particularly commonly in those with inhalation injuries. Anemia secondary to full thickness burns of greater than 10% TBSA is common ***(Herndon, 2012).***

Electrical burns may lead to compartment syndrome or rhabdomyolysis due to muscle breakdown. Blood clotting in the veins of the legs is estimated to occur

in 6 to 25% of people. The hypermetabolic state that may persist for years after a major burn can result in a decrease in bone density and a loss of muscle mass. Keloids may form subsequent to a burn, particularly in those who are young and dark skinned ***(Rojas, 2012).***

Nurses are at greater risk of acquiring and transmitting Health Care Acquired Infections (HCAI) in the course of delivering nursing care; measures to prevent the transmissions are therefore a significant core nursing care. Aseptic technique among nurses in infection control during management of burns plays a vital role in reducing their morbidity and mortality and hence cost of burn wound management at individual and national level ***(Jerotich, 2016)***.

Significance of the study

Burn wound infections if poorly assessed and managed can lead to long-term disabilities, increased morbidity and mortality. The role of aseptic techniques as infection control measures in relation to other factors need to be identified and reinforced and this will enhance patients care ***(Chalya et al., 2014)***. Nurses have a professional and moral obligation to protect the health of their patients and share the responsibility to sustain and protect the natural environment ***(ICN, 2012)***.

Aim of the Study

The current study aims to assess nurses' performance for prevention of infection control in burn units through:

1-Assessing nurses knowledge regarding prevention of infection in the burn units.

2-Assessing nurses performance for caring of patients in the burn unit.

3- Assessing barriers affecting the nurses performance to prevent and control of infection during caring of patients.

Research questions:

The following research questions were formulated:

1- What is the nurses' knowledge for prevention of infection in the burn unit?

2- What is the nurses' performance for caring of patients in the burn unit?

3- Is there a relation between nurses knowledge, performance and infection control in burn units.

4- Is there a relation between barriers affecting nurse's performance and infection control in burn unit?

Burn

Burn injuries are of public health importance in both developed and developing countries. It is associated with several complications such as functional disability, severe scarring and contractures of the affected body part. Burn injuries affect the skin to a large extent ***(Agbenorku, 2013)***.

A burn is a type of injury to skin, or other tissues, caused by heat, cold, electricity, chemicals, friction or radiation. Burns are caused by scalds (hot liquids), heat, radiation, open flame, electricity and hot water bottles ***(Jabir et al., 2013)***. Burns is a leading cause of morbidity and mortality all over the world. Burns prevalence varies in both developing and developed countries due to socioeconomic and cultural differences ***(Giaquinto et al., 2014)***.

Burns Epidemiology

Burns are rated the fourth most common trauma following traffic accidents, falls and intentional violence with an estimated 90% occurring in Low and Middle Income Countries (LMICs). There are 6.1 burns related deaths per 100,000 populations annually in Africa whereas in High Income Countries (HICs), there is 1.0 burn related